Dairy Situation

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Economic Research Service

U.S. Department of Agriculture

DS-364

March 1977

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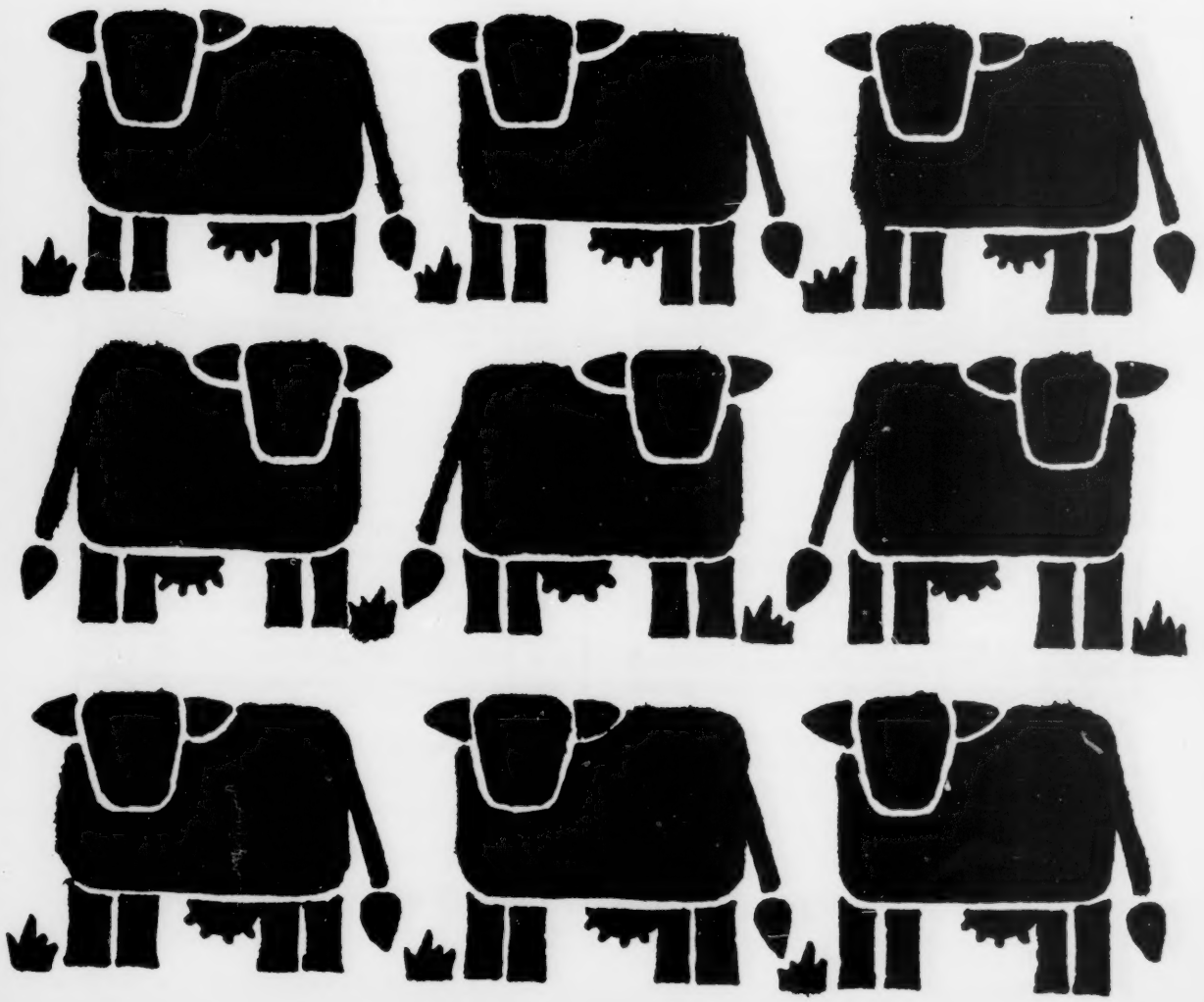

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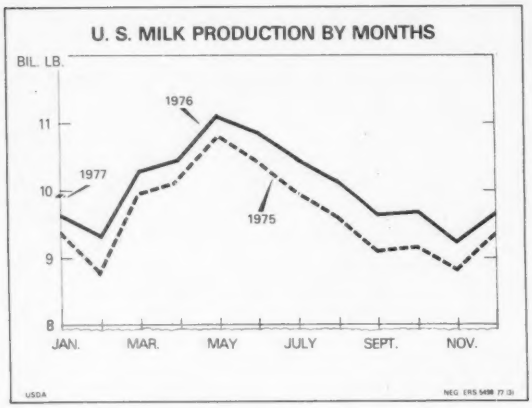


Figure 1

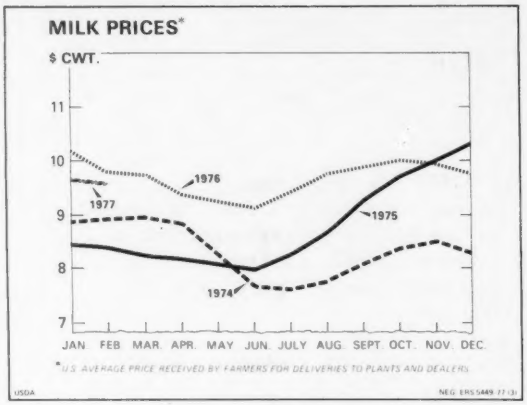


Figure 2

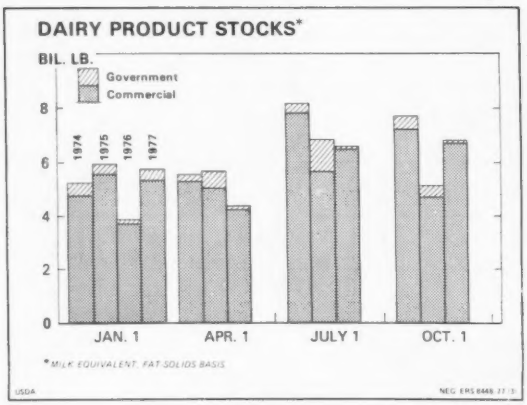


Figure 3

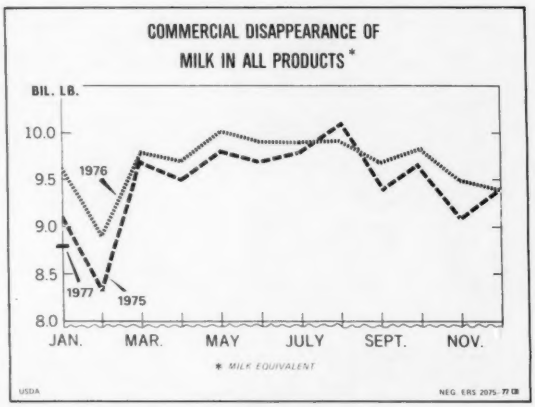


Figure 4

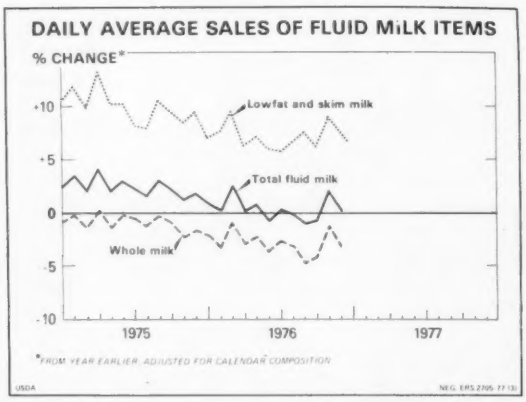
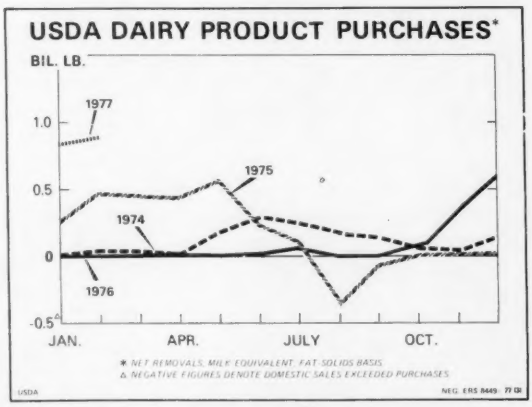


Figure 5



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SUMMARY

Milk production continued strong in early 1977, with the largest January milk production since 1965. Expected conditions at the $8.26 support level would point to an increase of 1-2 percent for all of 1977, with the largest production gains occurring during the first half of the year. However, if dry conditions persist, milk output could be adversely affected, either directly through forage conditions or indirectly through feed prices.

Farm milk prices could average below a year earlier during the first half of the year, while dairy ration costs likely will average slightly higher. However, the resulting milk-feed price relationships should still be favorable enough to encourage a high level of concentrate feeding and relatively normal gains in output per cow.

Although gains in output started to slow during the fourth quarter of the year, 1976 milk production totaled 120.4 billion pounds, up more than 4 percent from 1975. This was the highest annual production since 1965 and the largest year-to-year gain since 1953. Large increases in output per cow more than offset relatively small declines in milk cow numbers.

The *Dairy Situation* is published in March, May, July, September, and December

Farmers received an average $9.58 per 100 pounds of milk in February, down 42 cents from October and 21 cents below last February. Manufacturing grade milk prices held somewhat above the support level in February. For all of 1976, farmers averaged $9.68 per 100 pounds, up about 90 cents from 1975.

Cash receipts from dairying in 1976 were $11.4 billion, an increase of 15 percent from 1975, as larger marketings and higher prices both contributed. Although it might pull about even this spring, gross dairy income probably will run below year earlier levels in early 1977, as the larger marketings are not likely to offset lower farm milk prices.

Wholesale dairy product prices have been near support purchase prices since October. With very heavy supplies of milk expected to be available for manufacturing, wholesale prices probably will remain near support levels through the flush milk production season.

With the expected stability in wholesale prices, retail dairy prices probably will be fairly stable during the first half of 1977. Any major adjustment probably would be in response to a change in support prices.

Production of both cheese and butter remained heavy in early 1977 as supplies of milk available for manufacturing stayed quite large. Some diversion of milk to butter-powder has occurred. The changes from a year ago in butter output during February were relatively stronger than the changes in American cheese production for the first time in over a year. Nonfat dry milk output in January was limited by fuel supplies, but remained higher than a year ago. Output of dairy products probably will be large through the flush milk production season.

Total sales of milk and dairy products could increase about 1 percent this year, following a 2 percent rise in 1976. Last year's spurt to a record 116.3 billion pounds milk equivalent was largely the result of gains of more than a tenth in cheese sales, partially induced by recovering consumer income. Butter sales in 1976 were fairly good, even though they slipped from 1975 levels. Although still weak, nonfat dry milk disappearance recovered somewhat last year. Gains in lowfat milk sales managed to pull total fluid sales slightly above 1975. Ice cream sales eased.

Per capita consumption in 1976 totaled about 548 pounds milk equivalent, up just slightly from a year earlier as the sizable increase in per person sales was largely offset by lower government donations. However, per capita consumption of milk solids-not-fat rose significantly in 1976. With larger expected government supplies and increasing sales this year, per capita use of dairy products probably will rise.

Commercial dairy stocks were large on February 1. Holdings of both milkfat and solids-not-fat were up about a half from the low levels of a year ago. Seasonal rises in commercial stocks during the first half of 1977 likely will be limited, while sales to CCC under the price support program will be large.

After negligible purchases during the first 3 quarters of 1976, price support purchases of butter and cheese picked up last fall and have been heavy this winter. More milk was removed from the commercial market during January-February than during all of 1976. Net removals of nonfat dry milk have increased somewhat during recent months. Price support purchases of these products probably will be sizable until at least this summer.

Imports of dairy products totaled 1.9 billion pounds milk equivalent in 1976, up about 16 percent from 1975's low level. While most of the increase was due to larger cheese imports, these imports were limited by the elimination or substantial reduction of most export subsidies paid by certain European nations as a result of actions taken under the U.S. countervailing duties statute. These decisions likely will continue to limit cheese imports this year.

Milk production in the major producing nations is expected to rise nearly 2 percent this year, following a 2 percent increase in 1976. Thus, surplus conditions in the world dairy markets probably will persist in 1977.

DAIRY SITUATION

SITUATION AND OUTLOOK

PRODUCTION

Milk Output Strong

Milk output in January was up more than 3 percent from year-earlier levels, reflecting the continued heavier feeding of grain and other concentrates and momentum from the quite favorable year just concluded. Strong gains in output per cow easily offset the small decline in milk cow numbers and resulted in the largest January milk production since 1964.

Milk output per cow in January was almost 4 percent higher than a year earlier—a slightly smaller year-to-year increase than in November and December. These gains, while slowing, were sparked by heavier grain feeding as farmers reported feeding 3-percent more concentrates than a year earlier on January 1, following a boost of over 4 percent on October 1.

Milk cow numbers in early 1977 were down only about a half percent from year-earlier levels, even less than the relatively slow 1-percent decline in early 1976.

Production increases early this year were widespread with all regions registering gains of at least 1 percent. Output was up about 5½ percent in the Lake States, 2-3 percent in the Corn Belt and Pacific regions, but just over 1 percent in the Northeast. Only 6 of the 34 States that report monthly produced less milk than last January. Except for New York, where drops in output per cow (possibly weather related) held milk production below a year earlier, the 5 leading dairy States posted strong gains, ranging from California's 3 percent to Pennsylvania's 6 percent.

Fat tests of farm milk have been relatively high since November 1976. In fact, fat tests during January-February were the highest for that period since the early 1960's. Therefore, the recent increases from a year earlier in milkfat production were significantly greater than the gains in milk output. During the November-January period, milkfat output exceeded a year earlier by 4.7 percent, compared with a 3.7 percent increase in milk production. The higher fat tests resulted in higher yields of manufactured products per 100 pounds of milk and thereby bolstered farm milk prices.

The 1977 Outlook

Milk production started the year at a high level and expected conditions at the $8.26 support level would point to an increase of 1-2 percent for all of 1977. The largest gains from a year ago should occur during the first half of the year.

Farm milk prices could average below a year earlier during the first half of the year as weakened market conditions and a large potential for surplus conditions persist. Due to continued high prices for soybean meal, dairy ration costs likely will average slightly higher than a year earlier. The resulting milk feed price relationships, while less favorable than in early 1976, will still be conducive to heavy grain feeding and likely will lead to continued strong gains in output per cow, which probably will outweigh moderate declines in cow numbers.

The still large supply of replacement heifers at the start of the year, running over 35 per 100 milk cows, likely will help bolster cow numbers. However, expected higher slaughter cow prices probably will exert some downward pressure. Utility cows at Omaha were going for about $25 per 100 pounds by early March, with some rises expected this spring.

Two weather-related factors bear watching in the months ahead. Hay supplies, especially in the upper Midwest, are tight as a result of last year's relatively short crop and the severe winter weather. Drought conditions in California and potential drought conditions in other sections of the country could affect milk production later in the year, either directly through forage supplies or indirectly through grain prices. Either of these factors could encourage heavier culling and somewhat lower milk production than currently expected.

With the large potential for surplus conditions in 1977, price support actions will influence production decisions. If dairymen continue heavy concentrate feeding, as a result of higher milk prices and/or lower feed prices later in the year, and the declines in milk cow numbers stay very small, milk production could stay at high levels and post strong gains from 1976 through most of 1977. On the other hand, larger drops in cow numbers or limited feeding could pull milk output down to or below year-earlier levels by late 1977.

Table 1--Milk production, milk per cow, and milk cows on farms, by months, 1970-76, with comparisons

Month	1970	1971	1972	1973	1974	1975	1976 1/	Change from year earlier: 1975	Change from year earlier: 1976
	------ Million pounds ------							Percent	
	Milk production 2/								
January	9,403	9,573	9,720	9,525	9,333	9,338	9,607	+0.1	+2.9
February	8,852	8,994	9,391	8,932	8,755	8,756	9,308	*	+6.3
March	10,099	10,220	10,452	10,176	9,993	9,978	10,302	-.2	+3.2
April	10,289	10,423	10,566	10,298	10,126	10,088	10,480	-.4	+3.9
May	11,042	11,159	11,268	10,952	10,865	10,773	11,108	-.8	+3.1
June	10,703	10,815	10,946	10,532	10,614	10,444	10,816	-1.6	+3.6
July	10,209	10,285	10,442	10,014	10,169	9,969	10,453	-2.0	+4.9
August	9,733	9,860	9,978	9,489	9,710	9,546	10,112	-1.7	+5.9
September	9,203	9,328	9,431	8,877	9,136	9,072	9,616	-.7	+6.0
October	9,278	9,444	9,437	8,948	9,091	9,186	9,643	+1.0	+5.0
November	8,832	9,004	8,911	8,590	8,658	8,833	9,233	+2.0	+4.5
December	9,319	9,427	9,362	9,052	9,103	9,343	9,678	+2.6	+3.6
Total	116,962	118,532	119,904	115,385	115,553	115,326	120,356	-.2	+4.4
	Milk per cow 2/								
	------ Pounds ------							Percent	
January	778	804	826	821	828	834	867	+.7	+4.0
February	733	756	799	773	778	782	841	+.5	+7.5
March	838	860	890	883	889	892	931	+.3	+4.4
April	855	878	900	898	902	903	948	+.1	+5.0
May	919	942	961	957	969	966	1,006	-.3	+4.1
June	892	913	935	924	947	937	979	-1.1	+4.5
July	852	869	894	881	908	896	947	-1.3	+5.7
August	813	834	855	837	867	858	916	-1.0	+6.8
September	770	790	809	784	815	817	872	+.2	+6.7
October	777	800	810	791	812	827	874	+1.8	+5.7
November	740	763	766	760	773	797	836	+3.1	+4.9
December	782	800	805	802	813	843	877	+3.7	+4.0
Total 3/	9,747	10,009	10,250	10,114	10,300	10,352	10,893	+.5	+5.2
	Milk cows on farms 4/								
	----- Thousands -----							Percent	
January	12,087	11,908	11,773	11,597	11,266	11,202	11,083	-.6	-1.1
February	12,070	11,889	11,760	11,556	11,249	11,193	11,071	-.5	-1.1
March	12,053	11,881	11,747	11,518	11,243	11,181	11,060	-.6	-1.1
April	12,034	11,867	11,739	11,471	11,229	11,172	11,058	-.5	-1.0
May	12,019	11,852	11,721	11,439	11,216	11,156	11,047	-.5	-1.0
June	11,999	11,841	11,703	11,404	11,204	11,141	11,044	-.6	-.9
July	11,986	11,832	11,685	11,369	11,202	11,131	11,041	-.6	-.8
August	11,969	11,822	11,672	11,343	11,206	11,120	11,041	-.8	-.7
September	11,956	11,811	11,659	11,316	11,209	11,109	11,030	-.9	-.7
October	11,945	11,799	11,650	11,306	11,200	11,102	11,039	-.9	-.6
November	11,932	11,794	11,639	11,298	11,197	11,088	11,039	-1.0	-.4
December	11,916	11,785	11,624	11,293	11,203	11,087	11,032	-1.0	-.5
Annual average	12,000	11,842	11,698	11,409	11,219	11,140	11,049	-.7	-.8

1/ Preliminary.
2/ Excludes milk sucked by calves.
3/ May not add due to rounding.
4/ Excludes heifers not yet fresh.

*Less than .05 percent.

1976 Milk Summary

Milk production in 1976 totaled 120.4 billion pounds, up more than 4 percent from 1975 (table 1). This was the highest annual production since 1965 and the largest year-to-year gain since 1953. Milk output was up almost 3 percent (on a daily average basis) during the first quarter of 1976 and exceeded year-earlier levels by 3½ and 5½ percent, respectively, during the second and third quarters of the year. The gains in output started to slow during the fourth quarter, but still averaged over 4 percent above year-earlier levels.

Milk production increased in all regions during 1976 with the strongest gains registered in the Pacific and Lake States regions, where output increased around 6 percent. Production in the important Northeast region increased by 3½ percent, while the slowest gains (of just under 2 percent) occurred in the Delta States and Mountain regions (tables 2 and 3).

Following 3 years of minimal gains, milk output per cow rose about 5 percent (541 pounds) to 10,893 pounds last year, more than twice the average gain during 1965-75. The extremely large 1976 gain primarily reflected the relatively favorable milk-feed price relationships, which encouraged heavier concentrate feeding. In addition, the large proportion of dairy heifers that evidently entered the milking herd during 1975 began their second year of production, although this effect was partially offset by another large influx of replacement heifers during 1976.

Last year, the U.S. milking herd averaged 11.05 million cows, down less than 1 percent from 1975. This was the second consecutive year that the size of the milking herd had declined by the relatively very slow rate of less than 1 percent.

Milk Cows and Replacements Down Slightly

The annual livestock inventory showed 11.03 million milk cows on U.S. farms on January 1, 1977, down only a half percent from a year earlier (table 4). This drop was less than half that at the start of 1976 and was slightly less than at the beginning of 1975. During 1965-75, the average year-to-year decline was more than 2 percent.

Cow numbers at the start of this year were up in 13 States and were unchanged to slightly lower in all 5 of the major dairy States. During 1976, the average number of cows increased by almost 1 percent in the Pacific region, remained constant in the Northeast and Southeast, and declined in all other regions.

After declining slowly during the first half of 1976, cow numbers slipped very little during the

Milk cows and replacements, 1974-77

Date	Milk cows	Replacement heifers, 500 pounds and over	
		Number	Per 100 cows
	1,000	*1,000*	*Number*
1974			
January 1	11,286	3,942	34.9
July 1	11,203	3,900	34.8
1975			
January1	11,211	4,095	36.5
July 1	11,142	3,932	35.3
1976			
January 1	11,087	3,973	35.8
July 1	11,045	3,945	35.7
1977			
January 1	11,031	3,906	35.4

Table 2—Production, price, and income changes by production regions, 1976

Production regions	1976 change from year earlier				
	Milk production	Milk cow numbers[1]	Milk per cow	Farm milk prices[2]	Cash receipts from dairying[3]
	Percent				
Northeast	+3.5	0	+3.5	+12.3	+16.2
Lake States	+5.9	-.6	+6.5	+13.4	+20.1
Corn Belt	+3.8	-1.6	+5.5	+11.6	+15.8
Northern Plains	+2.1	-3.4	+5.7	+12.6	+15.0
Appalachian	+3.3	-.9	+4.3	+9.0	+12.6
Southeast	+4.3	0	+4.3	+4.3	+8.8
Delta States	+1.9	-2.0	+3.9	+10.1	+12.2
Southern Plains	+3.4	-3.3	+6.9	+11.7	+15.5
Mountain	+1.8	-1.2	+3.0	+11.1	+13.1
Pacific	+6.1	+.9	+5.1	+4.1	+10.5
United States	+4.4	-.8	+5.2	+10.6	+15.5

[1] Average number during the year. [2] Prices received by farmers for all milk sold to plants. [3] Cash receipts to farmers from milk and cream marketings.

Table 3--Milk: Production by production regions, 1972-76, with comparisons

State and region	1972	1973	1974	1975	1976 1/	1976	
						As percent of U.S. total	Change from year earlier
	------ Mil. lb. ------					--- Percent ---	
Maine	638	614	611	629	633	0.5	+.6
New Hampshire	353	337	329	336	335	.3	-.3
Vermont	2,039	1,948	1,945	2,009	2,125	1.8	+5.8
Massachusetts	629	595	593	601	598	.5	-.5
Rhode Island	69	64	63	63	60	2/	-4.8
Connecticut	643	614	613	608	616	.5	+1.3
New York	10,306	9,728	9,822	9,964	10,244	8.5	+2.8
New Jersey	645	575	551	528	545	.5	+3.2
Pennsylvania	7,031	6,718	6,980	7,140	7,507	6.2	+5.1
Delaware	132	128	128	127	130	.1	+2.4
Maryland	1,537	1,464	1,505	1,510	1,540	1.3	+2.0
NORTHEAST	24,021	22,785	23,140	23,515	24,333	20.2	+3.5
Michigan	4,966	4,636	4,350	4,411	4,620	3.8	+4.7
Wisconsin	19,226	18,442	18,713	18,900	20,296	16.9	+7.4
Minnesota	9,580	9,271	9,382	8,946	9,239	7.7	+3.3
LAKE STATES	33,772	32,349	32,445	32,257	34,155	28.4	+5.9
Ohio	4,573	4,267	4,221	4,259	4,503	3.7	+5.7
Indiana	2,454	2,329	2,260	2,210	2,272	1.9	+2.8
Illinois	2,838	2,717	2,596	2,560	2,499	2.1	-2.4
Iowa	4,400	4,180	4,025	3,893	4,120	3.4	+5.8
Missouri	3,025	2,992	2,989	2,840	2,972	2.5	+4.6
CORN BELT	17,290	16,485	16,091	15,762	16,366	13.6	+3.8
North Dakota	994	1,044	980	917	911	.8	-.7
South Dakota	1,540	1,569	1,542	1,472	1,551	1.3	+5.4
Nebraska	1,610	1,542	1,477	1,431	1,409	1.2	+.4
Kansas	1,629	1,505	1,403	1,403	1,461	1.2	+4.1
NORTHERN PLAINS	5,773	5,660	5,402	5,223	5,332	4.4	+2.1
Virginia	1,760	1,690	1,705	1,756	1,834	1.5	+4.4
West Virginia	345	333	350	350	336	.3	-4.0
North Carolina	1,537	1,524	1,534	1,602	1,666	1.4	+4.0
Kentucky	2,530	2,330	2,370	2,319	2,383	2.0	+2.8
Tennessee	2,147	1,946	1,892	1,875	1,946	1.6	+3.8
APPALACHIAN	8,319	7,823	7,851	7,902	8,165	6.8	+3.3
South Carolina	518	497	515	512	523	.4	+2.1
Georgia	1,235	1,168	1,190	1,199	1,279	1.1	+6.7
Florida	1,867	1,843	1,875	1,956	2,057	1.7	+5.2
Alabama	820	785	708	686	682	.6	-.6
SOUTHEAST	4,440	4,293	4,288	4,353	4,541	3.8	+4.3
Mississippi	993	950	907	876	862	.7	-1.6
Arkansas	728	706	706	707	736	.6	+4.1
Louisiana	1,132	1,062	1,059	1,054	1,088	.9	+3.2
DELTA STATES	2,853	2,718	2,672	2,637	2,686	2.2	+1.9
Oklahoma	1,235	1,140	1,137	1,060	1,102	.9	+4.0
Texas	3,340	3,280	3,380	3,208	3,309	2.7	+3.1
SOUTHERN PLAINS	4,575	4,420	4,517	4,268	4,411	3.7	+3.4
Montana	334	312	294	278	281	.2	+1.1
Idaho	1,663	1,657	1,555	1,555	1,554	1.3	-.1
Wyoming	135	130	123	110	113	.1	+2.7
Colorado	880	854	866	845	835	.7	-1.2
New Mexico	326	318	338	366	405	.3	+10.7
Arizona	640	737	810	840	882	.7	+5.0
Utah	874	866	925	919	924	.8	+.5
Nevada	143	144	167	168	179	.1	+6.5
MOUNTAIN	4,995	5,018	5,078	5,081	5,173	4.3	+1.8
Washington	2,307	2,338	2,312	2,322	2,428	2.0	+4.6
Oregon	1,005	1,008	1,004	990	1,027	.9	+3.7
California	10,400	10,332	10,596	10,853	11,575	9.6	+6.7
PACIFIC	13,712	13,678	13,912	14,165	15,030	12.5	+6.1
Alaska	18	18	18	17	16	2/	-5.9
Hawaii	136	138	139	146	148	.1	+1.4
UNITED STATES	119,904	115,385	115,553	115,326	120,356	100.0	+4.3

1/ Preliminary. 2/ Less than 0.05 percent.

Table 4.--Milk production and factors affecting supply, United States, selected years, 1955-77

Year	Milk cattle on farms, January 1 1/			Milk cows on farms, average during year	Milk production		Prices received by farmers, 1967=100	
	Milk cows and heifers that have calved	Milk cow replacements; heifers 500 pounds and over			Per cow	Total	Dairy products	All farm products
		Total	Per 100 cows					
	Thou.	Thou.	No.	Thou.	Lb.	Mil. lb.		
1955	21,320	6,832	32.0	21,044	5,842	122,945	81	91
1960	17,650	5,686	32.2	17,515	7,029	123,109	84	94
1965	15,380	4,780	31.1	14,953	8,305	124,180	85	98
1966	14,490	4,450	30.7	14,071	8,522	119,912	96	106
1967	13,725	4,215	30.7	13,415	8,851	118,732	100	100
1968	13,115	4,080	31.1	12,832	9,135	117,225	104	102
1969	12,550	3,990	31.8	12,307	9,434	116,108	109	107
1970	12,091	3,880	32.1	12,000	9,747	116,962	113	110
1971	11,909	3,843	32.3	11,842	10,009	118,532	116	113
1972	11,778	3,828	32.5	11,698	10,250	119,904	120	125
1973	11,624	3,874	33.3	11,409	10,114	115,385	140	179
1974	11,286	3,942	34.9	11,219	10,300	115,553	160	192
1975	11,211	4,095	36.5	11,140	10,352	115,326	167	186
1976 2/	11,087	3,973	35.8	11,049	10,893	120,356	192	186
1977 2/	11,031	3,906	35.4					

Year	Average prices received by farmers per 100 pounds				Parity prices per 100 pounds 3/		
	All milk, wholesale	Milk, eligible for fluid market	Milk, manufacturing grade	Milkfat in cream 4/	All milk, wholesale	Milkfat in cream 4/	Equivalent for manufacturing milk
	Dol.	Dol.	Dol.	Ct.	Dol.	Ct.	Dol.
1955	4.01	4.50	3.15	57.8	4.71	74.1	3.94
1960	4.21	4.69	3.25	60.5	5.01	74.1	4.01
1965	4.23	4.63	3.34	61.1	5.53	79.2	4.31
1966	4.81	5.17	3.97	67.2	5.73	82.1	4.47
1967	5.02	5.43	4.06	68.2	5.88	84.0	4.62
1968	5.24	5.67	4.22	68.4	6.06	86.1	4.79
1969	5.49	5.87	4.45	68.9	6.49	91.5	5.15
1970	5.71	6.05	4.70	70.0	6.87	95.3	5.49
1971	5.87	6.19	4.86	69.1	7.21	99.1	5.79
1972	6.07	6.38	5.08	67.5	7.70	103.0	6.21
1973	7.14	7.42	6.20	67.2	8.64	113.0	7.01
1974	8.33	8.66	7.13	63.5	9.88	124.0	8.12
1975	8.75	9.02	7.63	71.0	11.00	129.0	9.14
1976 2/	9.68	9.97	8.58	N.A.	12.10	131.0	10.16

1/ Prior to 1965, estimated by Livestock Section, ERS.
2/ Preliminary.
3/ At beginning of marketing year.
4/ Cents per pound.

last half of the year. The decline of 9,000 cows from July to December compared with a drop of 44,000 during the comparable period in 1975. During the first eight months of 1976, milk-feed price relationships were very favorable when compared with the previous year, partially offsetting higher Utility cow prices. Fairly respectable milk-feed price relationships during the final third of 1976, although not as good as a year earlier, combined with lower slaughter cow prices to keep the culling rate slow. In addition, one of the more important factors in limiting 1976's rate of decline in cow numbers was the large number of dairy replacement heifers on farms during 1976 (figure 7).

The dairy replacement herd on January 1, 1977 remained large, although slightly smaller than the previous two years. Heifers (500 pounds and over) kept for milk cow replacement totaled just over 3.9 million head, down less than 2 percent from a year ago. The ratio of replacement heifers to milk cows was over 35 per 100 cows. This large number of replacements probably will continue to bolster milk cow numbers in the coming year.

Utility cow prices, Omaha

Month	1975	1976	1977
	Dollars per cwt.	*Dollars per cwt.*	*Dollars per cwt.*
January	16.82	23.26	22.95
February	18.18	25.90	23.88
March	19.45	27.45	
April	21.67	30.72	
May	23.55	30.24	
June	23.32	27.47	
July	22.00	25.80	
August	21.29	25.10	
September	22.45	22.90	
October	22.01	22.72	
November	20.73	20.59	
December	21.64	21.60	
Average	21.09	25.31	

Feed Prices Up a Little

As expected, higher protein feed prices have led to some strengthening in feed prices paid by dairymen. In early March, soybean meal at Decatur was

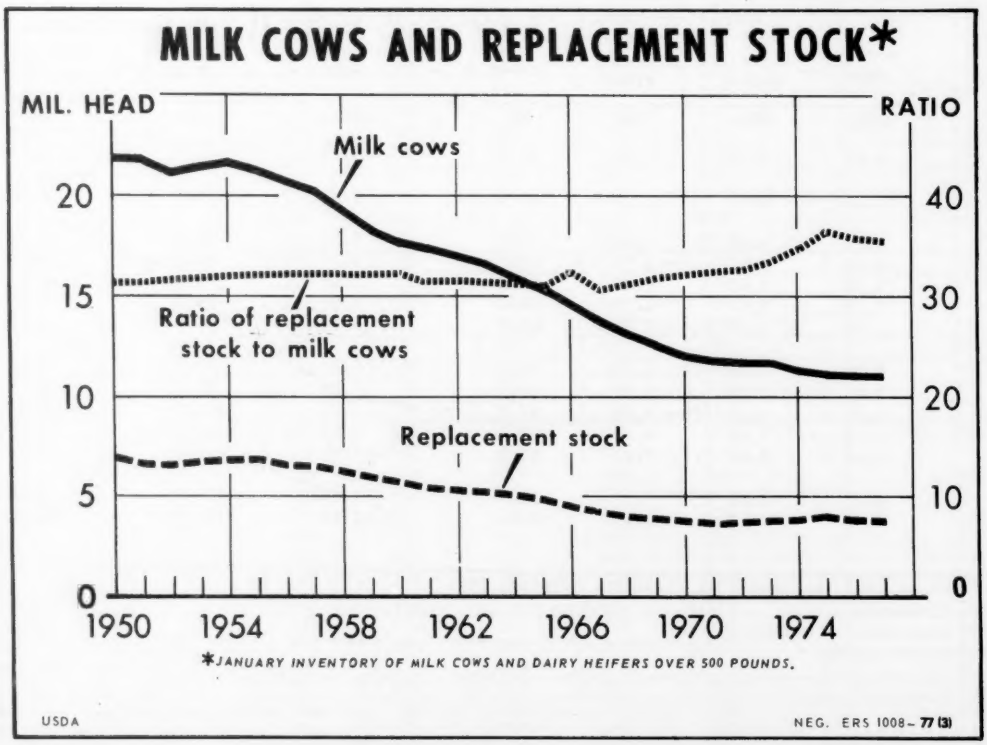

Figure 7

running about $230 per ton, up from about $130 a year ago. Soybean meal prices probably will remain near current levels until more is known about this year's world and U.S. crops.

By early March, Chicago corn was quoted at around $2.50 per bushel, slightly lower than a year ago, but up about 15-20 cents from November. Corn prices could show further strength over the next few months.

The price of 16-percent dairy ration averaged $151 per ton in February, about $15 higher than a year earlier, and likely will strengthen slightly in coming months. Hay remains expensive. Farmers paid an average $80 per ton in February for alfalfa hay, up about $10 from a year ago.

The milk-feed price ratio (pounds of feed equal in value to a pound of milk) was 1.49 in February, down from both November's 1.65 and last February's 1.66 (figure 8). The difference between the price of 100 pounds of milk and 100 pounds of concentrate ration was $3.14, down from $3.90 a year ago. Milk-feed price relationships likely will be less favorable than a year earlier during the first half of 1977, but should still encourage a high level of concentrate feeding.

Milk-feed price ratio[1]

Month	1975	1976	1977
	Pounds	*Pounds*	*Pounds*
January	1.25	1.75	1.52
February	1.29	1.66	1.49
March	1.33	1.64	
April	1.30	1.60	
May	1.30	1.51	
June	1.30	1.42	
July	1.34	1.42	
August	1.36	1.52	
September	1.47	1.53	
October	1.56	1.60	
November	1.67	1.65	
December	1.70	1.57	
Average	1.40	1.57	

[1] Pounds of concentrate ration equal in value to 1 pound of milk.

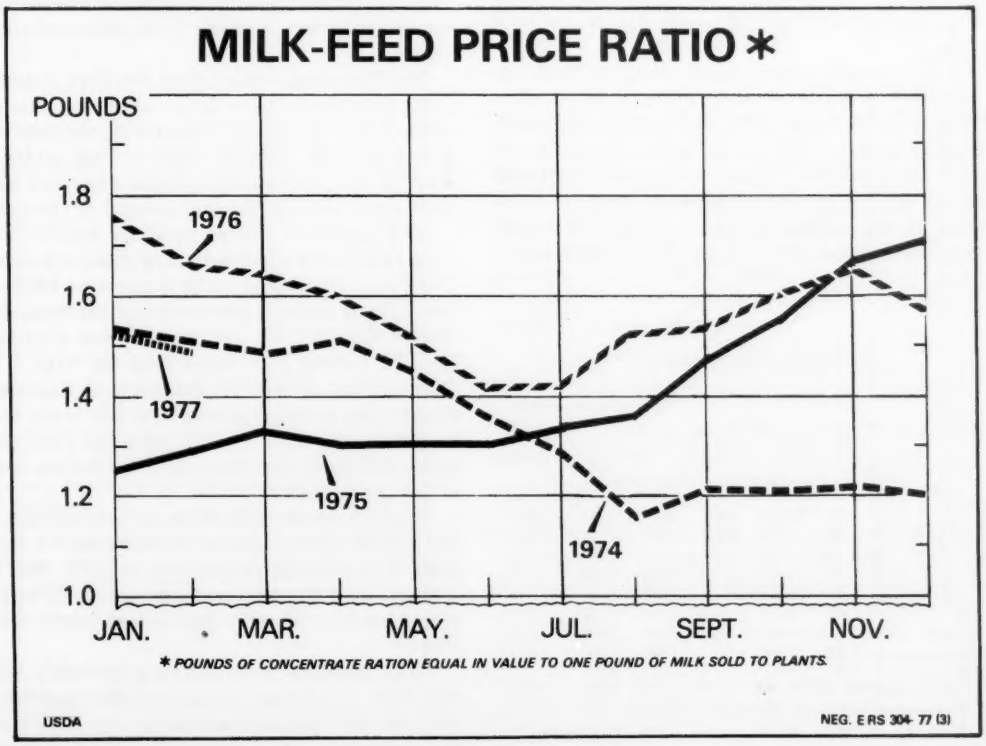

Figure 8

Manufacturing Milk Prices Near Suppport

Manufacturing grade milk prices have stabilized a little above the support level, after falling sharply last fall. Farmers received an average $8.43 per 100 pounds of milk in February, down slightly from a year ago. Adjusted to annual average fat test, manufacturing grade milk price were about a dime above the $8.26 support price, after exceeding $9.00 last August. Farm prices for this milk have been pushed down by the very heavy supplies of manufactured dairy products.

Manufacturing grade milk prices probably will remain near support during the first half of 1977. Even if milk output slows considerably and dairy sales are fairly strong, large commercial holdings and seasonally rising milk output likely would forestall any substantial increases.

Average farm prices for all milk will reflect the weakness in manufacturing milk prices. Farmers received an average of $9.58 per 100 pounds of milk in February, down 42 cents from October and 21 cents below a year ago. If the support price remains at $8.26, all milk prices will decline further during the first half of 1977 (due mostly to seasonal drops in fat test and the proportion used in fluid products) and would generally be below a year ago.

In 1976, farmers' milk prices averaged $9.68 per 100 pounds, up about 90 cents from a year earlier and about $1.35 from 1974. Manufacturing grade milk prices were up almost the same amount to an average of $8.58. The higher milk prices occurred as strong sales of milk and dairy products and the demand for rebuilding depleted commercial stocks outstripped increases in milk output during most of the year.

Milk prices received by farmers

Month	All sold to plants			Manufacturing grade		
	1975	1976	1977	1975	1976	1977
	Dollars per 100 pounds					
January	8.43	10.20	9.65	6.97	9.07	8.48
February	8.38	9.79	9.58	7.02	8.45	8.43
March	8.22	9.72		7.03	8.53	
April	8.18	9.37		7.06	8.50	
May	8.07	9.23		7.07	8.31	
June	7.99	9.11		7.09	8.32	
July	8.25	9.41		7.27	8.60	
August	8.64	9.75		7.63	8.88	
September	9.25	9.87		8.25	8.64	
October	9.70	10.00		8.77	8.53	
November	10.00	9.94		9.01	8.57	
December	10.30	9.75		9.30	8.55	
Average	8.75	9.68		7.63	8.58	

In January 1977, American cheese plants paid about 7 cents more for milk of equivalent fat test than did butter-powder plants. In recent years, cheese plants have tended to pay more than butter-powder plants during the winter months when fat tests of milk are seasonally high. Much of the relative advantage of American cheese plants under the current support purchase prices has been diminished due to the depressed prices of barrel cheese.

Minimum Class I prices in Federal order markets will average $10.26 per 100 pounds in April, down 83 cents from November and about a dime from a year ago. The levels of minimum Class I prices in late spring and early summer will be primarily determined by the support price for the new marketing year.

Dairying Grossed $11.4 Billion

Cash receipts from milk and cream marketings are estimated at $11.4 billion for 1976, up 15 percent from 1975 and 21 percent from two years earlier. Most of the increase from 1975 occurred as a result of much higher milk prices, although milk marketings by farmers were also substantially higher.

Sharp increases during the first 3 quarters of 1976 were responsible for most of last year's gains. After being up almost a fourth in the first quarter, gains in cash receipts held at just under a fifth during the second and third quarters and then were small during the last quarter of the year.

The index of prices paid for production items was relatively stable during January-December 1976 and averaged only 6 percent higher than 1975. This rate of year-to-year increase was well below the 1973-75 period and was similar to the 1970-72 period. The index was up only 3 percent from a year earlier by February of this year. The slower rise in input prices and the large increases in gross dairy income last year left dairymen in a much better income position than during the rather unfavorable year of 1975.

Slightly lower costs of dairy concentrate rations helped to slow the rise in dairymen's costs last year. The average ration cost in 1976 was down 1 percent from the two previous years. However, hay prices were up sharply due to last year's small hay crop.

Cash receipts from dairying probably will total less than a year ago during the first quarter of this year, as the higher marketings are unlikely to offset lower farm milk prices. However, cash receipts could at least equal a year earlier by this spring.

1976 Cost Per Cwt., Down; Cost Per Cow Up[1]

Production costs in 1976 rose almost $85 per cow, but last year's very large increases in output per cow resulted in a lower estimated cost per hundredweight. The preliminary estimate of the weighted average cost of producing 100 pounds of milk in 1976 was $9.40, down 8 cents from the 1975 estimate of $9.48. Higher cull cow and calf prices contributed to the decline in per hundredweight costs.

The average price received per 100 pounds of milk, for the production areas covered by this study, was estimated at $9.57, compared with $8.59 in 1975. This gave a return to the operator and family's labor, management, and risk of $2.03, double the 99 cent level of 1975.

Direct costs, which include total feed costs and most cash costs, accounted for 64 percent of total costs. In 1976, direct costs per hundredweight (at an average $6.06) were virtually unchanged from $6.05 a year earlier. These costs varied widely among both farms and regions, ranging from $5.32 in an Iowa region to $8.09 in Florida.

Milk production costs per hundredweight by major category, all subregions, 1975 and preliminary 1976[1] [2]

Cost Item	1975	Preliminary 1976
Feed	4.55	4.59
Interest on operating capital	0.08	0.07
Overhead	0.21	0.21
Other production items	0.99	0.98
Hired labor	0.22	0.21
Total direct costs	6.05	6.06
Operator and family labor	1.26	1.23
Ownership costs[3]	1.44	1.38
Management	.62	.62
Land allocation[4]	.11	.11
Total indirect costs	3.43	3.34
Total direct and indirect costs	9.48	9.40

[1] Reported State average received by farmers were used to index the actual prices paid by farmers obtained from the 1974 survey (Agricultural Prices, Annual Summary 1975, PR 1-3(76), June 1976 and January to October monthly agricultural prices, 1976). [2] Hundredweight of milk represents all milk sold, consumed on the farm, and the milk equivalent of dairy cattle and calves sold. Milk equivalent is estimated by dividing total dollar sales by the milk price per hundredweight received by farmers. [3] Depreciation, interest, taxes, and insurance. [4] At current value for agricultural purposes, dairy lot and pastureland only.

[1] This updates "Costs of Producing Milk in the United States, 1974," *Dairy Situation*, DS-361, July 1976. For more detail and methodology see *Cost of Producing Milk in the United States*, 1975 and 1976, Senate Committee Print No. 83-252, February 25, 1977.

The indirect costs include the ownership costs of machinery, buildings, equipment, and livestock plus operator and family labor, management, and land costs. These costs declined 9 cents per hundreweight last year to $3.34, even though they increased $22.48 per cow to $433.48.

Wholesale Prices Weak

Wholesale dairy product prices have been near support purchase prices since October. With very heavy expected supplies of milk available for manufacturing, wholesale prices probably will remain at support levels through the flush milk production season.

Wholesale prices of 40-pound blocks of American cheese have been very close to CCC's support purchase price of 92½ cents per pound (figure 9). However, barrel cheese prices have been quite depressed and the differential between the two styles has been very wide. This differential was as large as 9 cents during January, compared with a more typical level of 3-4 cents per pound. While supplies of both barrel and block styles were quite large during most of the last half of 1976 and in early 1977, the relatively larger expansion in recent years in barrel cheese capacity has resulted in heavier surpluses of this type. By early March, barrel cheese prices at Wisconsin assembly points had recovered somewhat to almost 87 cents per pound, about 6 cents below the block price.

Because of these weak conditions in the barrel cheese markets, CCC recently asked the industry for comments on its intention to purchase barrel cheese during the new marketing year starting April 1. Price support purchases of barrel cheese would tend to raise market prices of both barrel and processed cheese. Because of the added costs of meeting CCC specifications, the average price of all barrel cheese may remain somewhat below the announced purchase price.

Both butter prices and nonfat dry milk prices remain near support levels. Butter prices have been close to support since October and nonfat dry milk prices have hovered around 62.4 cents per pound for over a year.

Among other dry products, edible dry whey prices have fallen to less than 8 cents per pound (Central States production area). However, brisk demand this fall and winter has kept whey prices above last summer's generally unprofitable levels despite large supplies. The casein market appears to be tightening worldwide with prices somewhat higher than last summer. Very heavy production of lactose and low prices of other sugars have kept prices low. In eary March, lactose was quoted at about 16 cents per pound (Eastern area).

Manufacturers' average selling price for evaporated milk was $13.54 per case in January, down

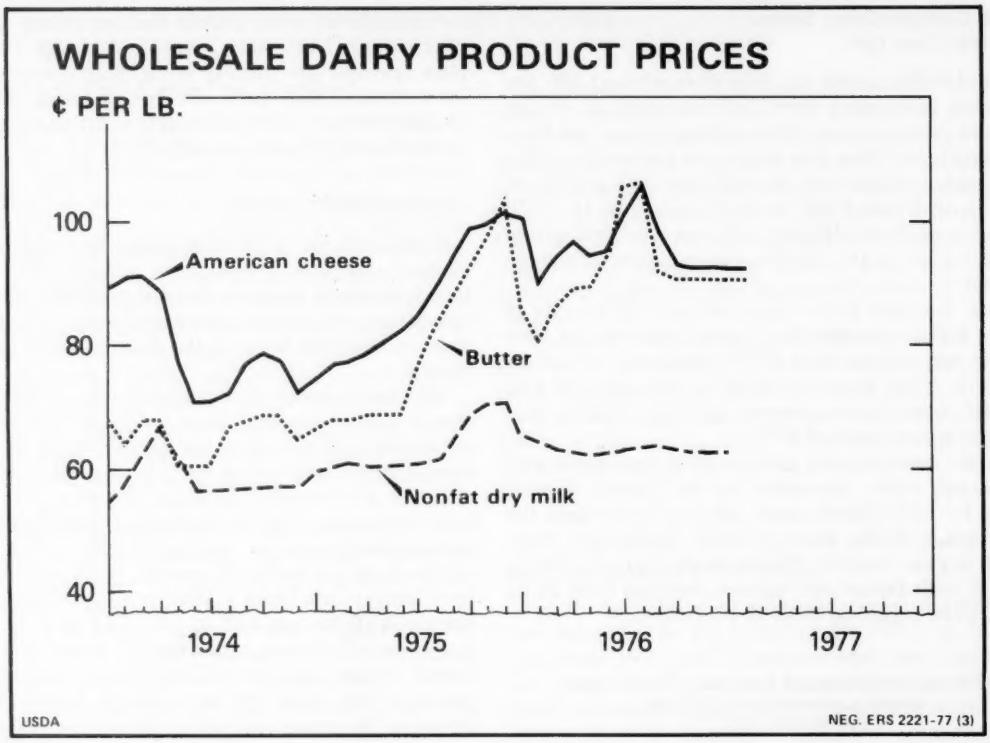

Figure 9

24 cents from a year ago. Although production was down in recent months, weak demand and sizable stocks have resulted in lower prices. Wholesale ice cream prices have been fairly stable since late last summer. Although butterfat prices are lower, larger proportions of the higher quality ice cream may have bolstered this BLS index.

The wholesale dairy price index, as reported by the Bureau of Labor Statistics (BLS), stood at 166.8 (1967=100) in January, down 2 percent from a year ago and 4 percent from last August. The index likely will be fairly stable at least until this spring.

Retail Prices About Steady

The BLS index of retail dairy prices stood at 171.3 (1967=100) in January, after declining slightly during the last quarter of 1976. In January, prices of dairy products were less than 2 percent higher than a year earlier, compared with a 1 percent rise in all food prices and a 5 percent increase in prices of all items. With the expected stability in wholesale prices, retail dairy prices probably will be fairly stable during the first half of 1977. The slightly lower than a year ago farm milk prices during the first half likely will be more than offset by a modest expansion in the farm-retail price spread. The only major upward adjustment in retail prices probably would be to any change in support prices.

In 1976, the BLS retail dairy price index averaged 169.3, up more than 8 percent from the 1975 average (table 5). After the sharp month-to-month

Retail dairy product prices

Item	Unit	Year 1975	Jan. 1976	Year 1976	Jan. 1977
All dairy products	1967=100	156.6	168.2	169.3	171.3
Butter	c/lb.	102.5	129.7	126.1	127.0
Processed American cheese	c/½-lb.	76.8	85.9	86.5	87.9
Ice cream	c/½-gal.	122.3	124.8	127.1	130.5
Whole milk: At stores	c/½-gal.	78.5	82.2	82.7	83.2
Evaporated milk	c/can	30.8	33.5	34.3	35.1
Skim milk: At stores	c/qt.	42.4	44.4	44.9	45.5

Table 5.--Factors influencing and indicative of the demand for milk and dairy products, United States, selected years, 1960-76 1/

Year	Total population July 1 (including Armed Forces overseas)	Total civilian employment	Per capita disposable income		Civilian per capita disappearance				
			Actual	Deflated by consumer price index 3/	Milk equivalent		Milk solids		Margarine
					Fat-solids basis	Calcium content basis	Milk-fat	Solids-not-fat*	
	Million	Million	Dollars	Dollars	Pounds	Pounds	Pounds	Pounds	Pounds
1960	180.7	65.8	1,934	2,180	653	512	24.5	41.4	9.4
1965	194.3	71.1	2,430	2,571	620	505	22.9	40.6	9.9
1966	196.6	72.9	2,597	2,672	604	503	22.3	40.3	10.5
1967	198.7	74.4	2,740	2,740	581	494	21.4	39.5	10.5
1968	200.7	75.9	2,930	2,812	577	499	21.2	39.7	10.8
1969	202.7	77.9	3,111	2,833	569	497	20.9	39.6	10.8
1970	204.9	78.6	3,348	2,879	561	486	20.6	39.8	11.0
1971	207.0	79.1	3,588	2,958	558	490	20.5	39.8	11.1
1972	208.8	81.7	3,837	3,062	561	479	20.6	39.6	11.3
1973	210.4	84.4	4,285	3,219	554	477	20.3	39.8	11.3
1974	211.9	85.9	4,639	3,141	543	471	20.0	38.2	11.3
1975	213.5	84.8	5,062	3,140	546	464	20.1	37.9	11.2
1976 2/	215.1	87.5	5,493	3,222	548	477	20.2	39.1	12.0

	Average retail prices, BLS index, 1967=100								
	Consumer price	All foods	Dairy products	Fluid milk, grocery	Butter	Cheese, American process	Ice cream	Evaporated milk	Margarine, colored
1960	88.7	88.0	88.4	91.1	86.7	76.2	100.7	89.7	88.6
1965	94.5	94.4	90.0	90.3	89.4	85.5	95.4	89.7	97.2
1966	97.2	99.1	95.8	96.1	97.3	95.8	97.6	94.2	99.7
1967	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1968	104.2	103.6	103.3	104.1	100.8	102.1	99.8	102.0	98.6
1969	109.8	108.9	106.7	107.0	102.1	107.7	100.5	105.2	98.3
1970	116.3	114.9	111.8	111.6	104.5	115.6	104.8	111.9	106.0
1971	121.3	118.4	115.3	114.6	105.8	121.0	106.2	118.6	116.0
1972	125.3	123.5	117.1	116.3	105.3	124.7	106.5	120.0	117.6
1973	133.1	141.4	127.9	127.3	110.7	138.5	113.1	134.3	133.4
1974	147.7	161.7	151.9	152.5	114.1	167.9	133.3	172.2	204.9
1975	161.2	175.4	156.6	152.7	124.2	175.8	151.6	183.9	224.6
1976	170.5	180.8	169.3	160.7	153.1	198.6	158.6	204.8	188.3

1/ Includes available data for Alaska and Hawaii beginning 1960.
2/ Preliminary.
3/ 1967 dollars.
* Revised.

increases during late 1975, prices fluctuated within a relatively narrow range during 1976.

Retail prices of fluid milk averaged about 83 cents per half-gallon in January, up a penny from a year ago and down about 1 cent from October. Fluid milk prices at retail have eased in recent months as Class I prices have declined. Retail ice cream prices stayed at about $1.31 per half-gallon in January, up almost 5 percent from a year earlier.

Even though retail butter prices dropped 8 cents per pound between September 1976 and January 1977, the spread between wholesale and retail prices stayed fairly wide. January's $1.27-per-pound retail average was down about 3 cents from a year earlier (figure 10). Even though consumers were paying more for margarine than at any time since last winter, the still wide difference between retail butter and margarine prices should help bring retail butter prices closer to wholesale.

Processed American cheese sold for about 88 cents per half-pound in January, up about 2 cents from a year ago but down slightly from October. As with butter, retail prices of American cheese have reflected only a part of the wholesale price drops.

Although the farm-retail spread for dairy products in the market basket of farm foods increased substantially during the last quarter of 1976 and was sharply above the depressed levels of a year earlier, this spread for the year as a whole was up only 5 percent from 1975 and only 7 percent from 2 years earlier. These relatively slow increases have been a moderating influence on rises in retail dairy prices during the past 2 years. Last year, the farm value increased almost 14 percent from a year earlier, while the retail value increased less than 10 percent. The farmer's share of the retail dairy dollar was 51 cents in 1976, up from 49 cents in the previous 2 years. During 1977, the farmer's share likely will decline to more typical levels.

UTILIZATION

Cheese and Butter Output Still Heavy

Cheese and butter production stayed well above a year ago in early 1977 as manufacturing operations had to handle large supplies of milk and cream, especially. Butter output in January was up

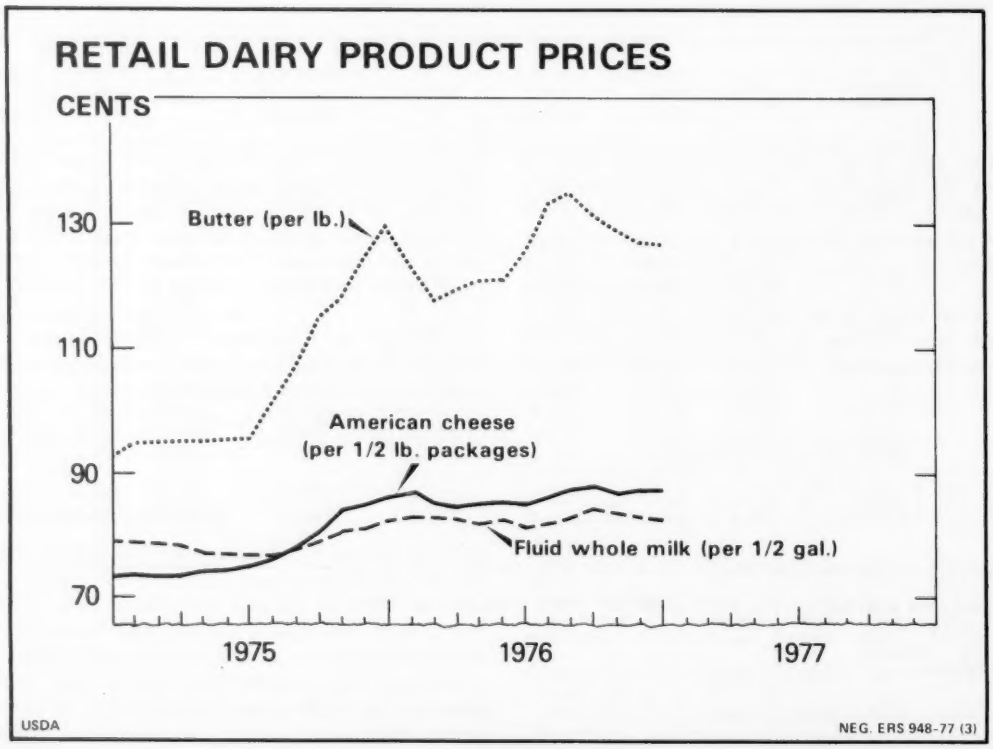

Figure 10

12 percent from a year ago and was even somewhat stronger in February. The fairly high fat tests of farm milk and low ice cream sales have increased the amount of cream going to churns, in addition to some diversion of milk from cheese production to butter-powder output. February was the first month in about a year and a half in which the change in butter production was relatively stronger than the change in American cheese output.

American cheese production was 12 percent above a year ago in January and the increases slowed to less than a tenth in February. While these were the smallest year-to-year gains since late 1975, January-February output was still record-high and easily exceeded market needs.

Production of other-than-American types totaled 98 million pounds in January, down slightly from a year ago. Other cheese output had been remarkably stable, at about 110 million pounds, since March 1976.

Nonfat dry milk output in January was up only 7 percent from 1976 as problems in obtaining fuel for drying caused some diversion of skim milk into condensed skim milk production. Large supplies of whey continued to result in higher output of dry and condensed whey products.

The milk equivalent of manufactured dairy products in January was up about 5 percent from a year earlier, well below increases during last summer and fall. The slower gains reflected the smaller increase in milk output and the higher solids content of the milk. Because of the higher fat test, it required less milk this January than a year ago to produce the same quantity of product. The increases in milk used in manufacturing should slow in coming months as increases in milk output diminish. Wisconsin out-of-State milk shipments remained at low seasonal levels early this year as most areas had plenty of milk to meet fluid needs and did not have to draw on the large reserves of the Upper Midwest.

Wisconsin out-of-state milk shipments

Month	1975		1976	
	Loads	Volume	Loads	Volume
	Number	*Thousand pounds*	*Number*	*Thousand pounds*
January	252	11,844	475	22,325
February	135	6,345	176	8,272
March	138	6,486	67	3,149
April	54	2,538	20	940
May	54	2,538	39	1,833
June	49	2,303	30	1,410
July	77	3,619	27	1,269
August	164	7,708	42	1,974
September	548	25,756	293	13,771
October	694	32,618	192	9,024
November	544	25,568	283	13,301
December	384	18,048	214	10,058
Total	3,093	145,371	1,858	87,326

Last year, manufacturing used about 64½ billion pounds milk equivalent, up over 4 billion pounds from 1975. Almost all of last year's increase in milk output went into manufacturing as fluid sales were about the same. The increase in milk used for cheese was slightly larger than the increase in milk used for all manufactured products, lifting the share accounted for by cheese output to about 45 percent of all milk for manufacturing in 1976.

Cheese production totaled 3.3 billion pounds in 1976, up 18 percent from 1975 (table 6). All of the varieties which are reported monthly posted increases, with the largest jump being the increase of almost a fourth in American cheese. Cream and Neufchatel was up only slightly but other reported types were 10-16 percent higher.

Both butter and nonfat dry milk started the year well below 1975 but moved above during the summer as greater supplies of milk became available. For the year, butter production was just barely

Table 6—Production of selected manufactured dairy products, 1974-76

Item	1974	1975	1976[1]	Change from year earlier	
				1975	1976
	Million pounds	*Million pounds*	*Million pounds*	*Percent*	*Percent*
Butter	961.7	980.5	983.8	+2.0	+.3
Cheese:					
American	1,858.6	1,654.5	2,046.7	-11.0	+23.7
Other	1,078.8	1,156.7	1,280.4	+7.2	+10.7
Creamed cottage	855.7	861.7	883.9	+.7	+2.6
Canned milk	1,035.2	953.8	929.1	-7.9	-2.6
Dry whole milk	67.7	63.1	79.5	-6.8	+26.0
Ice cream (mil. gal.)	782.0	833.3	805.8	+6.6	-3.3
Milk equivalent[2]	61,245	60,342	64,700	-1.5	+7.2
Nonfat dry milk	1,019.9	994.0	937.6	-2.5	-5.7

[1] Preliminary. [2] Total all manufactured products.

above 1975 while nonfat dry milk output was 6 percent below. Last year was the first time since the mid-1950's that less nonfat dry milk was produced than butter. This reflects the longrun trend toward increased amounts of cream from the fluid market and other manufactured products being churned for butter. Ten years ago, four-fifths of butter output was a joint product with nonfat dry milk. By 1976, this proportion had shrunk to just more than half. If the trend toward lower fat tests of fluid products continues in the future (thereby releasing more cream for use in manufactured products), this will require relatively more butter capacity than nonfat dry milk capacity. It could also diminish the influence of butter prices on the value of milk for manufacturing.

Production of manufactured dairy products probably will be up this year as much of the expected increase in milk output likely will find its way into manufacturing channels. If the increases in milk production do not abate by the flush season, manufacturing capacity could be strained, at least in some areas. Production of cheese probably will again expand, although the increase likely will be smaller than in 1976—when market requirements mandated a large boost. Butter production likely will be slightly higher with nonfat dry milk output about the same to slightly lower. Canned milk output probably will continue to decline.

Dairy Sales May Set Record in 1977

Stable retail dairy prices, modest rises in prices of most other foods, and expected growth in consumer incomes could raise dairy sales in 1977 above the record-high 1976 level. Higher cheese sales probably will again provide most of the upward impetus as cheese use is bolstered by higher incomes and the expected higher beef prices. Butter sales could be about the same to slightly lower than the past year. The wide differential between retail butter and margarine prices probably will forestall any substantial recovery in retail sales and the fairly heavy 1976 bulk usage may slip. Sales of nonfat dry milk may be about unchanged.

Expected stability in retail fluid milk prices could bring about a slight increase in total fluid sales this year. Gains in sales of lowfat milks may offset small drops in whole milk use. Cream sales probably will continue the upward pattern of very recent years.

In total, commercial sales of milk and dairy products (on a milk equivalent basis) could be up about 1 percent from 1976's 116.3 billion pounds, unless the support price is raised substantially. The size of the gain will be quite sensitive to the strength of cheese sales.

Dairy sales in January were quite weak. Commercial disappearance for the month was 8 percent below a year earlier as bad winter weather during part of the month disrupted normal shopping and marketing patterns. School closings probably limited fluid use and many shoppers were temporarily unable to reach stores or stores restricted hours. However, the actual sales decline may well have been less than shown by the disappearance data. In January 1976, the disappearance data probably were inflated by some rebuilding of depleted pipeline holdings of dairy products. This year, weather conditions may actually have caused some reduction of these pipeline levels.

Most of the drop in the January total was due to much lower commercial disappearance of butter, down about a third from a year ago. However, cheese sales also slipped slightly and nonfat dry milk disappearance was off almost a fifth.

The 1976 commercial disappearance of 116.3 billion pounds of milk was more than 2 percent higher than a year earlier and exceeded 1966 for a new record (table 7). Since retail prices averaged about 8 percent above 1975, it required a very strong increase in demand to result in the large gain in the quantities sold.

Increases in cheese sales more than accounted for the increase in total commercial use. After lackluster sales in 1975, rising consumer purchasing power pushed commercial disappearance of all cheese to almost 3.4 billion pounds in 1976, up more than a tenth from a year earlier and easily record-high (table 8). Lower meat prices during part of 1976 did not seriously dampen cheese demand. American cheese sales exceeded 1.9 billion pounds, up 12 percent from 1975. The 10-percent growth in sales of other types was only slightly smaller.

Cottage cheese sales have been only slowly recovering from the relatively very sharp increases in the price of milk solids-not-fat of the early

Changes in dairy sales from year earlier

Item	1975	1976
	Percent	*Percent*
Total milk[1]	+.5	+2.4
Manufactured products:		
American cheese	-3.6	+11.8
Other cheese	+4.3	+10.2
Cottage cheese[2]	+1.4	+2.9
Butter	+1.9	-2.5
Ice cream	+6.6	-3.3
Ice milk	-.5	-4.4
Canned milk	-4.9	-5.8
Nonfat dry milk	-14.9	+6.8
Fluid products:	+1.6	+1.0
Whole milk	-1.3	-1.9
Skim and lowfat milk	+8.7	+7.6
Cream and mixtures	+4.2	+3.2

[1] On a milk equivalent, fat-solids basis. [2] Creamed and low-fat.

Table 7--Commercial disappearance: Total milk, annual and by quarters, 1974-76 1/

Item	1974	1975					1976 2/				
		By quarters				Annual	By quarters				Annual
		1st	2nd	3rd	4th		1st	2nd	3rd	4th	
	------ Billion pounds ------										
Production	115.6	28.1	31.3	28.6	27.4	115.3	29.2	32.4	30.2	28.6	120.4
Farm use	3.3	.8	.8	.8	.8	3.2	.8	.8	.8	.8	3.2
Marketings	112.3	27.3	30.5	27.8	26.6	112.1	28.4	31.6	29.4	27.8	117.2
Beginning commercial stocks	4.7	5.6	5.0	5.5	4.7	5.6	3.7	4.2	6.5	6.7	3.7
Imports	2.9	.3	.2	.4	.7	1.7	.4	.4	.4	.7	1.9
Total supply	119.9	33.2	35.7	33.7	32.0	119.3	32.5	36.2	36.3	35.2	122.8
Ending commercial stocks	5.6	5.0	5.5	4.7	3.7	3.7	4.2	6.5	6.7	5.3	5.3
Net removals	1.3	1.1	1.2	4/-.3	5/	2.0	5/	.1	.1	1.1	1.2
Commercial disappearance											
Actual	113.0	27.0	29.0	29.3	28.2	113.6	28.3	29.7	29.5	28.8	116.3
Percent change 3/	+.5	-3.5	+2.7	+2.2	+.5	+.5 6/	+3.5	+2.3	+.8	+1.9	+2.4

1/ Milk equivalent, fat solids basis. Totals may not add due to rounding. 2/ Preliminary. 3/ From year earlier using unrounded data. 4/ Minus denotes domestic sales exceeded purchases. 5/ Less than 50 million pounds. 6/ On a daily average basis.

Table 8.--Commercial disappearance: Selected dairy products, United States, annual 1967-75, by quarters, 1975-76

Year and quarter	Butter 1/	Cheese		Nonfat dry milk	Canned milk	Frozen products 3/
		American 2/	Other			
	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. gal.
1967	973.9	1,175.9	738.2	1,012.2	1,571.5	1,040.2
1968	976.0	1,213.3	803.0	1,058.0	1,496.8	1,082.3
1969	921.9	1,281.0	861.6	1,042.1	1,376.1	1,092.2
1970	898.2	1,398.0	909.1	983.2	1,213.8	1,097.3
1971	847.1	1,454.8	987.0	981.8	1,186.9	1,102.4
1972	885.4	1,595.7	1,127.8	919.2	1,102.6	1,108.6
1973	855.6	1,677.1	1,210.2	1,110.1	1,056.7	1,118.6
1974	929.9	1,780.6	1,276.5	809.9	999.5	1,124.3
1975	947.7	1,717.0	1,331.8	689.5	950.8	1,176.0
1975-1st	254.7	398.3	305.8	146.6	240.2	246.7
2nd	239.3	442.2	324.5	128.3	222.3	334.2
3rd	217.3	443.4	334.9	237.6	240.1	351.3
4th	236.2	432.9	366.6	176.9	248.2	243.7
1976-1st	248.8	460.2	339.0	190.0	230.1	253.7
2nd	216.7	489.1	365.0	190.3	207.6	318.6
3rd	212.6	478.5	369.7	201.6	216.9	334.2
4th	245.9	491.0	392.9	153.8	241.3	230.3
	1975-76 percent change					
	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.
1st 4/	-3.4	+14.2	+9.8	+27.9	-5.3	+1.8
2nd	-9.4	+10.6	+12.5	+48.3	-6.6	-4.7
3rd	-2.2	+7.9	+10.4	-15.2	9.7	-4.9
4th	+4.1	+14.4	+7.2	-13.1	2.8	-5.5

1/ Imports include butter equivalent of butteroil. 2/ Imports include Colby cheese; stocks do not include processed cheese. 3/ Excludes Mellorine. 4/ On a daily average basis.

1970's. Creamed cottage cheese sales totaled 884 million pounds in 1976, up 3 percent from a year earlier but still well below the billion-pound levels of 1970-72. Lowfat cottage cheese sales set a new record, as sales were up 5 percent to 136 million pounds.

Although commercial disappearance of butter last year was down more than 2 percent from 1975, it was just barely under 1974 and up 6 percent from the 1970-73 average. The wide difference in retail butter and margarine prices hurt retail butter sales last year, but demand for bulk butter to be used as an ingredient was strong. Rising incomes may have been an important factor in the demand for products using butter.

Nonfat dry milk sales recovered somewhat in 1976 but remained fairly weak. Commercial disappearance of 736 million pounds was up 7 percent from 1975 but down a fourth from the 1970-73 average. During 1976, wholesale powder prices were quite stable, prices on current output averaged almost exactly the same as 1975, and Standard grade nonfat dry milk was available from the government at reduced prices. The lack of substantial recovery in sales under these favorable price conditions indicates that the market for nonfat dry milk has shrunk considerably from earlier years. Fortification of lowfat fluid milks has declined substantially as processors discovered that the plain products have good consumer acceptability. Possibly the most important decline has been in the use of powder in processed foods. The very wide difference between the price of nonfat dry milk and dry whey or mixtures of dry whey and other ingredients has encouraged substitution wherever possible.

Frozen dessert sales were down in 1976. Ice cream sales were 3 percent below the very strong 1975 level (table 9). The less expensive types bore the brunt of the decline, as the higher milkfat and "all natural" types reportedly continued to increase their shares of the market. Sherbet was the only frozen dessert to post a gain last year, as ice milk sales slipped 4 percent. Mellorine sales dropped almost a fourth in 1976 and were the lowest since the early 1950's. Last year's mellorine sales were less than half the levels of the late 1960's.

Among other manufactured dairy products, commercial disappearance of canned milk was down almost 6 percent. Domestic sales of canned milk were lower last year than since before 1920. Sales of dry whey and modified dry whey products increased substantially in 1976 and use of dry whole milk was up slightly.

Gains in sales of lowfat and skim items slightly outweighed the drop in whole milk sales. Total fluid product sales in 1976 were about 1 percent higher than a year earlier. Sales of yogurt, half-and-half, and cream items rose last year.

1976 Per Capita Sales Jumped; Consumption About the Same

Per capita civilian consumption in 1976 rose less than 3 pounds to 548 pounds (milk equivalent, fat solids basis). Although higher than the two previous years, 1976 was well below the 1970-73 period.

These consumption data normally do not accurately reflect the commercial market for dairy products but almost all of last year's consumption was from commercial channels. A significant proportion of most earlier years' use consisted of products donated by USDA. Per person sales in 1976 were up almost 2 percent from a year earlier and the highest since the late 1960's. The difference in civilian consumption and civilian sales is the amount of butter, American cheese, and evaporated milk donated plus milk consumed on farms.

Americans consumed an average 20.15 pounds of milkfat last year, up just slightly from 1975 (table 10). They also averaged 39.1 pounds of milk solids-not-fat. Per person consumption of solids-not-fat rose about a pound in 1976, mostly on the strength of cheese use and the recovery in nonfat dry milk use.

Cheese consumption jumped to 15.9 pounds per person last year, up 1.4 pounds from 1975 and the largest increase since 1945. The increase in sales per person was even greater, but government donations (mainly through the school feeding programs) fell to low levels. Unlike the storable cheeses, cottage cheese use just barely managed to post a gain.

Per capita civilian consumption

Item	1974	1975	1976	1975-76 change
	Pounds	*Pounds*	*Pounds*	*Percent*
Products:				
Butter	4.6	4.8	4.4	-8.3
Cheese	14.6	14.5	15.9	+9.7
Cottage cheese	4.7	4.7	4.8	+2.1
Ice cream	17.5	18.6	17.8	-4.3
Ice milk	7.8	7.7	7.3	-5.2
Nonfat dry milk	4.2	3.3	3.8	+15.2
Canned milk	4.4	4.1	3.7	-9.8
Fluid milk:				
Whole	204	200	195	-2.5
Lowfat and skim	78.3	84.5	90.2	+6.7
Cream and mixtures	5.7	5.8	6.0	+3.4
Milkfat	20.0	20.1	20.2	+.5
Milk solids-not-fat	38.2	37.9	39.1	+3.2

Butter consumption fell to about 4.4 pounds per person from 4.8 pounds a year earlier. Only about 0.1 pounds of the decline was due to lower sales with the rest representing lower donations. Per capita use of nonfat dry milk in 1976 rose a half pound to 3.8 pounds but was still far below earlier years.

Table 9.--Milk and dairy products sales (domestic disappearance, commercial sources) total and per capita, selected years, United States, 1965-76 1/

Year	Fluid milk product sales					Butter	Cheese			Evaporated and condensed	
	Fluid whole milk	Cream 2/	Low-fat milk 3/	Total			Whole and part skim milk 5/		Cottage cheese 6/	Whole milk	Skimmed and buttermilk
				Product weight	Whole milk equivalent 4/		American	Other			
	Million pounds										
	Total										
1965	49,750	1,430	6,390	57,570	55,400	1,122	1,106	653	901	2,092	967
1970	45,875	1,130	11,525	58,530	52,000	902	1,393	892	1,060	1,349	1,016
1971	45,295	1,125	12,800	59,220	51,800	878	1,452	971	1,108	1,303	1,039
1972	45,390	1,150	14,180	60,720	53,220	861	1,573	1,110	1,133	1,236	980
1973	44,130	1,160	15,390	60,680	52,400	846	1,661	1,193	1,103	1,194	894
1974	41,710	1,185	16,425	59,320	50,500	917	1,771	1,267	992	1,154	732
1975	41,170	1,235	17,855	60,260	51,400	944	1,692	1,317	1,006	1,092	770
1976 7/	40,405	1,275	19,210	60,890	50,900	921	1,915	1,454	1,034	1,020	N.A.
	Per capita 8/										
	Pounds										
1965	264	7.6	34.0	306	294	5.8	5.7	3.4	4.7	10.8	5.0
1970	229	5.6	57.5	292	260	4.4	6.8	4.4	5.2	6.6	5.0
1971	223	5.5	63.0	292	255	4.3	7.0	4.7	5.4	6.3	5.0
1972	221	5.6	69.1	296	259	4.1	7.6	5.3	5.4	5.9	4.7
1973	213	5.6	74.3	293	253	4.0	7.9	5.7	5.3	5.7	4.3
1974	200	5.7	78.6	284	242	4.3	8.4	6.0	4.7	5.5	3.5
1975	195	5.9	84.7	286	244	4.4	7.9	6.2	4.7	5.1	3.6
1976 7/	190	6.0	90.4	287	240	4.3	8.9	6.8	4.8	4.8	N.A.

Year	Frozen products				Dry products				
	Ice cream	Ice milk	Sherbet	Other	Mello-rine	Whole milk	Nonfat dry milk	Butter-milk	Whey 9/
	Million pounds								
	Total								
1965	3,634	1,270	295	39	255	61	931	79	113
1970	3,656	1,577	318	40	249	43	960	50	294
1971	3,676	1,582	317	47	232	32	958	55	319
1972	3,685	1,599	325	53	218	24	853	48	377
1973	3,714	1,604	346	70	191	21	1,056	39	384
1974	3,753	1,628	325	56	166	15	839	44	453
1975	4,000	1,620	313	67	144	16	661	44	487
1976 7/	3,868	1,548	322	N.A.	111	35	778	37	556
	Per capita 8/								
	Pounds								
1965	18.8	6.6	1.5	0.2	1.3	0.3	4.8	0.4	0.6
1970	17.9	7.7	1.6	.2	1.2	.2	4.7	.2	1.5
1971	17.8	7.7	1.5	.2	1.1	.2	4.6	.3	1.6
1972	17.7	7.7	1.6	.3	1.0	.1	4.1	.2	1.8
1973	17.7	7.6	1.6	.3	.9	.1	5.0	.2	1.8
1974	17.8	7.7	1.5	.3	.8	.1	4.0	.2	2.1
1975	18.8	7.6	1.5	.3	.7	.1	3.1	.2	2.3
1976 7/	18.0	7.2	1.5	N.A.	.5	.2	3.6	.2	2.6

1/ Excludes milk used on farms where produced and distribution from USDA supplies; includes sales to the Armed Services for use in the United States. 2/ Includes milk and cream mixtures. 3/ Includes skim milk, buttermilk, and flavored milk drinks. 4/ Fat solids basis. 5/ Excludes cottage cheese. 6/ Includes full-skim American. 7/ Preliminary. 8/ Based on resident population, except fluid milk product sales--based on estimated population using fluid products from purchased sources. 9/ Includes modified whey products starting 1975.

Table 10--Milk solids and selected dairy products: Supply and utilization, 1970-76

Year and item	Supply				Utilization					Ending stocks
	Beginning stocks	Production	Imports	Total supply	Foreign		Domestic		Total use 2/	
					Exports	Shipments 1/	Military	Civilian		
	Million pounds									
Milkfat										
1970	188	4,283	72	4,543	15	20	87	4,148	4,332	211
1971	211	4,344	52	4,607	93	21	72	4,176	4,422	185
1972	185	4,408	66	4,659	57	25	64	4,253	4,459	200
1973	200	4,221	150	4,571	24	24	43	4,234	4,383	188
1974	188	4,238	108	4,534	21	20	39	4,189	4,326	208
1975	208	4,244	65	4,517	21	17	37	4,247	4,380	137
1976 3/	137	4,417	74	4,628	19	20	37	4,292	4,425	203
Solids-not-fat										
1970	343	10,059	82	10,484	438	42	116	8,017	10,227	257
1971	257	10,194	57	10,508	411	36	105	8,127	10,308	200
1972	200	10,324	67	10,591	332	53	94	8,175	10,429	162
1973	162	9,923	335	10,420	77	46	80	8,287	10,223	197
1974	197	9,938	216	10,351	77	42	70	8,016	9,899	452
1975	452	9,930	67	10,449	170	75	65	8,003	9,870	579
1976 3/	579	10,351	88	11,018	153	37	65	8,337	10,390	628
Butter 4/										
1970	89	1,143	2	1,234	2	7	45	1,061	1,115	119
1971	119	1,147	2	1,268	93	6	32	1,040	1,171	97
1972	97	1,102	2	1,201	44	10	23	1,017	1,094	107
1973	107	919	56	1,082	4	13	9	999	1,025	7/57
1974	7/57	962	2	1,021	1	6	9	956	972	49
1975	49	980	2	1,031	1	2	9	1,008	1,020	11
1976 3/	11	984	2	997	1	3	9	937	950	47
American cheese										
1970	265	1,428	16	1,709	4	12	8	1,431	1,455	254
1971	254	1,518	17	1,789	4	16	7	1,520	1,547	242
1972	242	1,652	15	1,909	4	17	5	1,614	1,640	269
1973	269	1,678	28	1,975	4	16	4	1,661	1,685	290
1974	290	1,862	112	2,264	5	24	3	1,811	1,843	421
1975	421	1,660	16	2,097	5	19	3	1,762	1,789	308
1976 3/	308	2,047	14	2,369	6	16	3	1,932	1,957	412
Other cheese										
1970	52	773	145	970	3	5	6	886	900	70
1971	70	856	119	1,045	3	6	5	966	980	65
1972	65	952	164	1,181	3	6	5	1,105	1,119	62
1973	62	1,007	202	1,271	3	7	5	1,188	1,203	68
1974	68	1,075	204	1,347	3	4	7	1,260	1,274	73
1975	73	1,151	163	1,387	4	5	7	1,310	1,326	61
1976 3/	61	1,280	193	1,534	3	10	7	1,447	1,467	67
Evaporated and condensed milk 5/										
1970	150	1,514	3	1,667	50	63	6	1,432	1,551	116
1971	116	1,492	3	1,611	68	56	5	1,393	1,522	89
1972	89	1,435	2	1,526	55	72	5	1,313	1,445	81
1973	81	1,338	3	1,422	43	58	4	1,248	1,353	69
1974	69	1,285	3	1,357	43	58	2	1,175	1,278	79
1975	79	1,213	1	1,293	54	64	2	1,114	1,234	59
1976 3/	59	8/1,179	1	1,239	49	76	2	8/1,041	8/1,168	71
Nonfat dry milk 6/										
1970	222	1,444	2	1,668	416	16	7	1,079	1,530	138
1971	138	1,418	2	1,558	358	17	5	1,083	1,468	90
1972	90	1,223	2	1,315	282	23	5	955	1,270	45
1973	45	917	267	1,229	18	19	1	1,113	1,154	75
1974	75	1,020	115	1,210	9	18	1	884	916	294
1975	294	994	2	1,290	113	6	1	696	821	469
1976 3/	469	938	2	1,409	100	8	1	817	928	481

1/ To U.S. territories.
2/ Includes fed to animals or wasted where applicable.
3/ Preliminary.
4/ Includes butter equivalent of butteroil.
5/ Unskimmed includes both bulk and case goods.
6/ Human food only.
7/ Includes an estimated 10 million pounds of imported butter.
8/ Estimated.

For other products, 1976 per capita use was up for lowfat milks, cream, and dry whole milk. Use per person of whole milk, canned milk, and ice cream slipped.

Per capita use of milk in all products probably will rise this year. In addition to larger expected total sales, larger government supplies will lead to higher domestic donations. However, donations will not reach the 4-5 billion pound level of many years of the 1960's and early 1970's, due to the much more limited donation outlets.

Commercial Dairy Stocks Large

Commercial dairy stocks were heavy on February 1, reflecting the large output of manufactured products. Milkfat in commercial hands on that date totaled about 193 million pounds, up a half from last year's low levels and slightly above the high level of two years earlier. Commercial stocks of milk solids-not-fat were about 251 million pounds, also up a half from a year earlier but below 1975. While stocks of milkfat had increased since the start of the year (mostly as a result of higher butter stocks), holdings of solids-not-fat were slightly lower. Commercial stocks, on a milk equivalent basis, totaled 5.5 billion pounds on February 1 (table 11). These holdings probably were more than ample to meet trade needs, in light of the expected heavy output this spring. The spring buildup in commercial dairy stocks may be slowed this year while sales to the government under the price support program are larger.

Commercial interests held 412 million pounds of American cheese on February 1, up a third from a year ago and close to the record-high level of 1975. Although the market needs for cheese in storage have expanded with larger sales, these stocks were still somewhat burdensome. The high commercial stocks were one of the reasons for the recently slower increases in American cheese output. Commercial holdings of other varieties of cheese were up more than a tenth from 1976, but fairly well in line with the level of current sales and stocks in other recent years.

Even though substantial sales to CCC have been made in recent months, commercial holdings of butter were still large on February 1. Stocks in commercial hands totaled almost 39 million pounds, up from the extremely low 5 million pounds a year earlier and the highest on that date in almost a quarter century.

Manufacturers' stocks of nonfat dry milk stood at about 88 million pounds on February 1, double last year's level although below the very high stocks of two years ago. While these holdings appeared high relative to sales in recent months, the industry apparently has not been willing to trim their stocks substantially by sales to the government.

The demand this year for dairy products to store is almost reversed from a year earlier. With the current large stocks, the industry probably will demand less-than-normal quantities to seasonally rebuild their stocks. Last year, the very large quantities which were required to bring commercial stocks back to comfortable seasonal levels provided a major force holding market prices above support levels.

USDA Purchases Heavy

After negligible purchases of butter and cheese during January-September 1976, USDA removals since then of these products under the price support program have been relatively large. During the October-December quarter, CCC net removals totaled 39 million pounds of butter, 27 million pounds of cheese, and 10 million pounds of evaporated milk for a milk equivalent total of about 1.1 billion pounds. During January-February, another 64 million pounds of butter and 41 million pounds of cheese (1.7 billion pounds milk equivalent) was purchased.

Net purchases of nonfat dry milk continue. January-February net removals of powder totaled about 46 million pounds, after 46 million pounds were purchased during the last quarter of 1976. Net removals of nonfat dry milk have been significant in every month since the start of 1976.

During calendar 1976, net purchases under the price support program were the equivalent of 1.2 billion pounds of milk, the lowest in a decade and the second lowest in almost a quarter century (table 12). With wholesale prices staying above support purchase prices in all but the last few months of the year, purchases of 39 million pounds of butter and 38 million pounds of cheese both were less than two-thirds their fairly low 1975 levels.

Even though nonfat dry milk prices remained close to CCC's support purchase price throughout the year, net removals were also down substantially. The diversion of milk into cheese production and some recovery in commercial use of nonfat dry milk held CCC net removals to 157 million pounds, less than half the year-earlier level and the second lowest since 1952. The 258 million pounds actually purchased was partially offset by the 101 million pounds of Standard grade or very old Extra grade sold back to the industry at reduced prices.

USDA purchases of dairy products under the price support program probably will be fairly heavy during the first half of this year, and the total for the year could be the largest since the early 1970's. The most important considerations will be the degree of slowing in milk production

Table 11--Stocks of dairy products, United States, end of year or month, 1965-76

Year and month	Commercial stocks					Government stocks				Total milk equivalent 3/
	Butter	American cheese	Other cheese	Canned milk	Nonfat dry milk	Butter 1/	American cheese 2/	Nonfat dry milk	Evaporated milk	
	------ Million pounds ------									
1965	27.1	270.2	37.6	140.7	58.2	25.0	0.3	96.2	---	4,458
1966	30.2	322.1	50.4	204.5	118.2	2.1	.2	---	---	4,858
1967	18.4	302.3	46.2	196.0	98.7	150.2	80.8	157.6	---	8,252
1968	14.5	291.1	62.3	101.3	79.0	102.9	51.6	198.7	5.6	6,634
1969	25.1	264.4	52.1	106.9	83.9	63.6	1.1	137.8	42.9	5,245
1970	19.7	252.7	70.5	115.7	95.3	99.1	1.3	42.6	.1	5,803
1971	26.2	235.6	65.4	88.6	77.0	70.7	6.1	12.5	.2	5,104
1972	11.1	269.3	62.0	74.7	37.9	96.4	.2	6.9	5.8	5,498
1973	33.5	289.9	67.5	69.2	74.5	22.8	.4	.1	4/	5,207
1974	34.7	419.8	73.1	79.2	134.6	14.5	1.1	158.6	4/	5,886
1975										
Mar.	31.6	383.0	62.0	54.3	114.4	28.9	3.3	220.5	---	5,646
June	40.0	403.7	64.8	104.0	111.7	59.6	10.1	329.6	4/	6,859
Sept.	25.8	354.1	61.3	96.6	48.6	13.8	15.1	463.9	4/	5,133
Dec.	5.8	305.7	60.8	58.6	47.1	5.0	2.0	421.8	4/	3,844
1976 5/										
Mar.	27.6	311.9	58.5	57.4	55.1	3.6	.8	420.1	4/	4,306
June	76.3	416.8	63.3	125.4	122.5	4.6	.5	359.4	.1	6,571
Sept.	65.6	455.7	66.2	135.2	104.1	2.5	.7	390.5	.2	6,735
Dec.	28.0	409.8	67.1	70.6	94.0	19.1	1.6	386.6	.1	5,708

1/ Includes butter equivalent of butteroil and ghee, 1965. 2/ Includes process cheese held by USDA beginning May 1967. 3/ Includes manufactured products for which current monthly series are available (excludes nonfat dry milk). Excludes cream and bulk condensed milk beginning 1968. 4/ Less than 50,000 pounds. 5/ Preliminary.

Table 12--Dairy products removed from the commercial market by programs of the United States Department of Agriculture, 1949-76

Year and month	Removals 1/					Solids content of removals			
	Butter 2/	American cheese 3/	Evaporated milk 4/	Nonfat dry milk 5/	Milk equivalent	Milkfat	Solids-not-fat	As a percentage of marketings: Milkfat	As a percentage of marketings: Solids-not-fat
	Million pounds							Percent	
1949	111.7	25.5	---	325.5	2,489	100.4	321.1	2.6	4.6
1950	14.6	83.2	---	327.2	1,126	40.9	339.9	1.1	4.9
1951	6/-27.3	6/-7.1	---	35.3	6/-618	6/-24.0	31.5	6/	.5
1952	16.1	1.7	---	42.3	339	13.8	41.2	.4	.6
1953	355.2	302.5	---	597.1	10,200	387.5	668.9	9.7	8.6
1954	305.1	242.5	---	644.4	8,588	328.2	695.5	8.0	8.7
1955	162.0	141.3	---	534.7	4,685	179.6	558.0	4.3	6.8
1956	164.6	186.5	---	723.4	5,206	197.6	753.0	4.7	8.7
1957	172.5	240.6	---	825.2	5,870	222.1	867.5	5.2	9.8
1958	183.7	75.0	---	886.0	4,658	178.2	875.0	4.2	9.8
1959	123.7	57.2	---	830.3	3,214	123.8	815.6	2.9	9.1
1960	144.8	.3	---	852.8	3,101	122.6	819.8	2.9	8.9
1961	329.4	100.0	---	1,085.6	8,019	305.0	1,075.3	6.9	11.2
1962	402.7	212.9	---	1,386.1	10,724	402.4	1,399.0	9.1	14.3
1963	307.5	110.9	---	1,219.2	7,745	291.8	1,210.1	6.7	12.4
1964	295.7	128.5	---	1,168.8	7,676	287.6	1,166.9	6.5	11.6
1965	241.0	48.6	---	1,098.4	5,665	217.4	1,074.0	5.0	10.8
1966	25.1	10.8	---	365.8	645	26.2	355.5	.6	3.7
1967	265.1	180.5	---	687.0	7,427	276.3	719.1	6.6	7.5
1968	194.8	87.5	54.9	557.8	5,159	193.2	575.4	4.7	6.0
1969	187.9	27.7	107.5	407.2	4,479	171.6	421.5	4.2	4.4
1970	246.4	48.9	48.4	451.6	5,774	221.1	460.7	5.3	4.8
1971	292.2	90.7	111.4	456.2	8/7,268	8/276.5	8/490.1	6.6	5.0
1972	233.7	30.4	97.0	345.0	8/5,345	8/208.4	8/362.0	4.9	3.6
1973	97.7	3.2	53.7	36.8	8/2,185	8/ 84.9	8/ 49.0	2.1	.5
1974	32.7	60.3	28.3	265.0	8/1,346	8/ 50.4	8/280.2	1.2	2.9
1975 7/	63.4	68.2	24.5	394.5	2,036	77.7	405.6	1.9	4.2
1976 7/									
Jan.	---	---	2.3	6.7	5	.2	6.9		
Feb.	---	---	2.7	6.6	6	.3	6.8		
Mar.	---	---	2.2	5.9	5	.2	6.1		
Apr.	.4	.5	3.5	5.6	20	.8	6.2		
May	---	1.1	1.7	16.0	15	.6	16.0		
June	---	3.1	1.3	22.5	33	1.3	22.8		
July	---	6.2	1.0	27.6	64	2.3	28.6		
Aug.	---	---	1.5	10.6	3	.2	10.5		
Sept.	---	---	1.1	9.7	3	.2	9.5		
Oct.	4.9	.4	1.5	8.9	108	4.3	9.0		
Nov.	14.2	8.7	1.5	19.4	383	14.5	21.8		
Dec.	20.0	18.0	1.4	17.6	593	22.1	22.9		
Total*	39.4	38.0	21.8	157.1	1,236	46.8	167.1	1.1	1.7

1/ Delivery basis, after unrestricted domestic sales.
2/ Includes butter equivalent of anhydrous milkfat, PIK, and purchases under Sec. 709, and 4a.
3/ Includes purchases under Sec. 709, and 4a.
4/ Includes purchases under 4a.
5/ Includes PIK certificates issues, and purchases under Sec. 709 and 4a.
6/ Domestic sales exceeded purchases.
7/ Preliminary.
8/ Includes dry whole milk purchases beginning November, 1971
*May not add due to rounding.

Uncommitted CCC stocks

Item	March 1	
	1976	1977
	Million pounds	*Million pounds*
Butter (bulk)	---	81.4
Cheddar cheese	---	18.0
Nonfat dry milk	430.3	428.5

and the rate of increase in dairy product sales. Purchases in excess of available donation outlets would have a strong impact on possible seasonal rises in farm milk prices and wholesale dairy product prices during the last half of 1977. Given the current sell-back policy (105 percent of the support purchase price for the product), modest price rises would make these government stocks available to the commercial market.

CCC uncommitted inventories have grown with the recent purchases. On March 1, these holdings comprised 81 million pounds of butter and 18 million pounds of cheese compared with none a year ago. Uncommitted inventories of nonfat dry milk totaled 429 million pounds, down slightly from 1975.

FOREIGN TRADE AND DAIRY TRENDS

1976 Imports a Little Larger

The strong 1976 domestic dairy prices resulted in a slight increase in U.S. dairy imports last year. However, the import quota system held imports to only about 1½ percent of domestic consumption. Imports under quota were equivalent to 1.0 billion pounds of milk last year, up just slightly from 1975. Even though world dairy markets were generally glutted, only about four-fifths of the amount allowed under the quotas actually entered. Nonquota types of cheese added an additional 0.9 billion pounds milk equivalent, up from 0.7 billion pounds in 1975.

Strong cheese sales and high domestic prices spurred a recovery in cheese imports last year. About 97 million pounds of quota type cheese was imported, up 6 percent from 1975 but less than was imported under the standing quotas in 1974 (table 13). Nonquota cheese imports totaled 110 million pounds last year, up a fourth from 1975 but also under 1974. Cheese imports were limited by the elimination or substantial reduction of most export subsidies paid by certain West European nations as a result of actions taken under the U.S. countervailing duties statute. These decisions likely will continue to limit cheese imports.

Dairy product imports[1]
(Quota and non-quota)

Year	Yearly quota[2]	Imports subject to quota	Imports not subject to quota	Total
	Million pounds	*Million pounds*	*Million pounds*	*Million pounds*
1970	946	845	1,033	1,878
1971	973	776	580	1,356
1972	1,166	1,023	671	1,694
1973	3,608	3,263	596	3,859
1974	2,293	1,968	955	2,923
1975	1,306	976	693	1,669
1976	1,306	1,032	906	1,938

[1] Milk equivalent. [2] Includes temporary quotas authorized in 1973 and 1974.

Quotas for most high-fat products (butter, butteroil, butterfat mixtures, and frozen cream) generally came close to being filled. The bulk of these products entered early in the year when the supply-demand balance for milkfat was tight. With the exception of nonfat dry milk, the quotas for high solids-not-fat products and concentrated milk products were not completely filled, in line with our surplus condition in the solids-not-fat markets.

Although 1976 imports of casein were very close to the 1970-74 average, they almost doubled the low 1975 level. The depressed market prices for lactose dropped imports of that product back to a level similar to 1973-74, after quadrupling in 1975.

U.S. exports were slightly smaller in 1976 but shipments to territories were slightly larger. The equivalent of 0.5 billion pounds of milk was exported last year. A little more cheese but less butter, canned milk, and dry whole milk were exported. Nonfat dry milk exports (mostly donations under the Food for Peace program (PL 480)) were down somewhat.

Shipments to U.S. territories also totaled about 0.5 billion pounds milk equivalent. The slight increase in 1976 was almost all due to higher shipments of canned milk as about the same quantities of other products were shipped.

U.S. dairy trade (milk equivalent)

Item	1970-72 average	1975	1976
	Million pounds	*Million pounds*	*Million pounds*
Imports:			
Cheese	1,257	1,443	1,683
Other products	386	225	255
Total	1,643	1,669	1,938
Exports	1,455	547	502
Shipments[1]	599	496	520

[1] To U.S. territories.

Table 13--Dairy products: U.S. imports, quota and non-quota, total 1975-76, and January 1976-77 1/

Product	Calendar year quota	Annual			January		
		1975	1976	1976 as a % of 1975	1976	1977	1977 as a % of 1976
	Thou. lb.	Thou. lb.	Thou. lb.	Pct.	Thou. lb.	Thou. lb.	Pct.
Cheese, quota types							
American-Cheddar	10,037.5	10,600	7,984	75	99	1,706	1,723
-Other	6,096.6	6,033	6,196	103	581	640	110
Italian-Original loaves	11,500.1	10,173	11,060	109	402	1,391	346
-Other	1,494.0	1,232	1,276	104	51	135	265
Edam and Gouda-Natural	9,200.4	(9,207)	(9,023)	(98)	(201)	(384)	(191)
-Processed	3,151.0						
Blue Mold	5,017.0	4,564	4,593	101	171	238	139
Swiss-Emmenthaler, -$1.00*	20,420.0	10,473	12,435	119	680	1,087	160
-Gruyere-process, -$1.00*	11,242.0	6,829	8,690	127	936	259	28
Other-Over 0.5% fat, -$1.00*	40,730.0	25,832	31,116	120	565	2,069	366
-Under 0.5% fat	8,901.0	6,667	4,741	71	454	24	5
Total	127,789.6	91,610	97,114	106	4,140	7,933	192
Cheese, non-quota types							
Swiss-Emmenthaler, $1.00 +*		36,279	48,499	134	2,608	4,177	160
-Gruyere-process, $1.00 +*		5,321	6,741	127	408	645	158
Other, $1.00 +*		26,155	34,405	132	2,115	3,049	144
Pecorino		17,114	16,728	98	2,298	1,760	77
Roquefort		1,392	1,560	112	142	153	108
Other 2/		1,557	2,053	132	122	248	203
Total		87,818	109,985	125	7,694	10,032	130
Other quota products							
Butter	707.0	526	528	100	64	87	136
Butteroil	1,200.0	1,200	1,200	100	1,200	1,200	100
Butterfat mixtures	2,580.0	1,828	2,468	135	1	724	72,400
Ice cream	3,377.3	---	---	---	---	1,280	---
Frozen cream	12,540.0	12,353	12,964	105	2,161	4,146	192
Nonfat dry milk	1,807.0	2,465	1,807	73	276	80	29
Dried buttermilk	496.0	783	444	57	---	179	---
Evaporated milk	1,312.0	455	28	6	1	---	---
Condensed milk	4,079.0	445	639	144	26	260	1,000
Chocolate crumb-Regular	17,000.0	2,323	8,484	365	149	N.A.	---
-Lowfat	4,680.0	2,086	2,140	103	140	N.A.	---
Animal feed with milk solids	16,300.0	15,795	12,226	77	343	2,100	612
Non-quota products							
Casein		58,444	112,141	192	8,541	9,650	113
Lactose		5,501	1,268	23	94	3	3
Milk equivalent, fat solids basis, total all product	1,305,620	1,668,680	1,937,689	116	155,598	251,373	162

1/ Preliminary. 2/ Gjetost, Bryndza, Gammelost and Noekkelost, and Goya.
*Price break effective October 19, 1976.

Continued Rise in World Output Seen

Milk production in the major producing nations is expected to rise by nearly 2 percent this year, following a 2-percent increase in 1976. Most nations likely will share in the increase, with the exceptions of Australia and, possibly, Canada. Although EC output is expected to rise somewhat, this will be subject to policy decisions yet to be announced. The higher milk production bodes poorly for a return to balanced supply conditions in world dairy markets.

In the EC last year, milk deliveries were up almost 3 percent from a year earlier, despite the fact that deliveries were about the same to somewhat lower during the second half of the year. Milk production in 1976 was also up in Scandinavia and other West European countries. Poland and East Germany produced more milk but the USSR output was down, although not as much as earlier expected.

Milk production in Canada was about the same despite the large increases early in 1976. Drought and low market prices have reduced Australian production in their current season but New Zealand output has posted sizable gains.

Despite the increases in milk output, EC cheese production was only slightly above 1975 as stocks were worked off. Cheese output rose somewhat more in other West European countries and Canada, but was down in Oceania. By late 1976, EC cheese holdings were generally below a year earlier.

Butter production was considerably higher in most European countries as butter operations absorbed the bulk of the increase in milk supplies. Intervention stocks in the EC were up more than half at yearend and could present serious problems in the coming year. In line with changes in milk output, butter production was generally down in Australia but considerably higher in New Zealand.

The world surplus of nonfat dry milk shows no real signs of abating. The moderate increase in EC production resulted in even higher intervention stocks (about 2½ billion pounds) at the start of 1977 than a year ago. Canadian stocks were still heavy although 1976 output was down. Oceanic production has been down during the current season, due to lower milk output in Australia and increased diversion to casein in New Zealand.

Table 14.--U.S. Dairy Situation at a Glance

Item	Unit or base period	1975	1976							1977
		Jan.	Jan.	Feb.	Sept.	Oct.	Nov.	Dec.	Year	Jan.
Production and cow numbers:										
Total milk	Mil. lb.	9,338	9,607	9,308	9,616	9,643	9,233	9,678	120,356	9,910
Milk per cow	Lb.	834	867	841	872	874	836	877	10,893	899
Number of milk cows	Thou.	11,202	11,083	11,071	11,030	11,039	11,039	11,032	11,049	11,023
Prices received by farmers:										
All milk, sold to plants, 100 pounds	Dol.	8.43	10.20	9.79	9.87	10.00	9.94	9.75	9.68	9.65
Percentage of parity 1/	Pct.	74	82	78	80	80	78	76	80	74
Manufacturing grade milk, 100 pounds	Dol.	6.97	9.07	8.45	8.64	8.53	8.57	8.55	8.58	8.48
Parity equivalent	Dol.	9.14	10.00	10.08	10.25	10.16	10.16	10.25	10.18	10.67
Fat content	Pct.	3.77	3.77	3.71	3.62	3.76	3.83	3.83	3.66	3.79
Minnesota-Wisconsin (3.5% fat), 100 pounds	Dol.	6.80	8.90	8.25	8.46	8.26	8.26	8.25	8.48	8.19
Milk eligible for fluid market, 100 pounds	Dol.	8.77	10.50	10.20	10.20	10.40	10.30	10.00	9.97	9.93
Price ratios and dairy ration values:										
Milk-feed	Lb.	1.25	1.73	1.66	1.53	1.60	1.65	1.57	1.57	1.50
Manufacturing grade milk-hog	Lb.	.18	.19	.18	.22	.26	.28	.24	.21	.22
Manufacturing grade milk-beef cattle	Lb.	.26	.27	.25	.27	.27	.28	.27	.26	.26
Value of concentrate ration fed milk cows	Dol.	6.72	5.84	5.89	6.44	6.24	6.03	6.21	6.17	6.34
Farm cash receipts from dairy products	Mil. dol.	775	957	890	932	936	878	914	11,392	965
Production of factory products:										
Creamery butter	Mil. lb.	99.9	94.3	85.4	63.4	78.2	77.3	91.8	983.8	105.6
American cheese, whole milk	Mil. lb.	128.5	149.3	149.7	157.2	151.9	143.4	164.8	2,046.7	166.8
Cheese, other than American	Mil. lb.	85.7	99.7	91.5	110.2	104.4	108.7	110.1	1,280.4	98.0
Canned milk, unskimmed	Mil. lb.	75.9	76.2	73.3	66.4	58.6	57.4	64.9	929.1	62.5
Dry whole milk	Mil. lb.	4.6	7.4	6.7	6.2	4.5	4.5	5.1	79.5	6.1
Frozen products 2/	Mil. gal.	75.9	74.3	77.4	101.2	81.6	75.8	72.9	1,136.9	69.9
Creamed cottage cheese	Mil. lb.	71.2	70.5	69.6	74.2	70.7	66.5	62.8	883.9	69.9
Total whole milk equivalent 3/	Mil. lb.	4,830	4,983	4,830	4,868	4,727	4,520	5,007	63,471	5,250
Nonfat dry milk, human use	Mil. lb.	83.4	67.0	71.1	61.2	61.6	54.5	72.8	937.6	71.5
Wholesale prices:										
Butter, 92-score, Chicago, pound	Ct.	66.8	86.1	80.9	92.4	90.8	90.8	90.8	92.0	90.8
Cheese, American (40-pound blocks), f.o.b. Wisconsin assembling points, pound	Ct.	74.8	100.4	90.0	98.1	93.3	92.9	92.8	96.3	92.6
Evaporated milk, case (mid-point of range)	Dol.	11.93	13.78	13.78	13.22	13.91	13.39	13.36	13.67	13.54
Dry whole milk, pound	Ct.	64.5	83.1	78.2	80.3	78.4	77.8	78.2	79.4	76.8
Nonfat dry milk, pound	Ct.	59.3	65.9	64.3	46.0	63.3	63.2	62.5	63.5	62.4
Dairy products and ice cream index (BLS)	1967=100	148.3	169.7	163.4	170.3	169.5	168.1	167.3	168.4	166.8
Retail prices (BLS):										
Milk, fresh, grocery, half-gallon	Ct.	79.3	82.2	82.7	82.9	84.3	83.7	83.3	82.7	83.2
Evaporated milk, 14½-ounce can	Ct.	30.5	33.5	33.8	34.5	34.7	34.9	35.1	34.3	35.1
Cheese, American, processed, sliced, ½-pound package	Ct.	73.1	85.9	86.7	87.7	88.2	87.4	87.7	86.5	87.9
Butter, pound	Ct.	92.1	129.7	123.1	135.0	131.0	128.9	127.3	126.1	127.0
Ice cream, half-gallon	Ct.	121.6	124.8	126.8	128.4	130.2	128.7	131.1	127.1	130.5
Dairy products index	1967=100	155.2	168.2	168.5	171.1	172.7	171.7	171.4	169.3	171.3
All foods index	1967=100	170.9	180.8	180.0	181.6	181.6	181.1	181.7	180.8	183.4
Margarine, colored, pound	Ct.	71.4	56.6	54.3	51.9	53.0	52.8	53.2	52.6	53.2
Stocks, end of month:										
Creamery butter	Mil. lb.	53.7	9.3	16.5	68.1	60.7	47.4	47.1	---	69.5
Cheese, total 4/	Mil. lb.	485.9	362.5	365.9	522.6	501.5	481.9	478.5	---	483.7
Canned milk, unskimmed	Mil. lb.	68.1	44.6	49.6	135.3	131.8	97.0	70.7	---	66.3
Dry whole milk	Mil. lb.	7.3	6.7	7.9	11.0	10.5	10.7	9.1	---	11.1
Total whole milk equivalent 5/	Mil. lb.	5,897	3,735	3,934	6,735	6,363	5,815	5,708	---	6,229
Nonfat dry milk	Mil. lb.	308.4	457.5	460.0	494.7	496.6	479.7	480.6	---	461.6
Commercial disappearance:										
Creamery butter	Mil. lb.	92.9	96.3	77.2	76.9	81.5	82.2	82.2	924.2	63.9
Cheese, American	Mil. lb.	123.2	153.5	147.7	153.1	172.6	159.4	159.0	1,918.8	149.3
Cheese, other than American	Mil. lb.	102.7	112.4	100.6	126.8	121.1	127.1	144.7	1,467.0	113.1
Canned milk, unskimmed	Mil. lb.	85.6	88.0	65.5	66.5	60.7	90.8	89.8	896.0	66.8
Milk in all products	Mil. lb.	9,061	9,566	8,929	9,736	9,811	9,460	9,514	116,303	8,801
Nonfat dry milk	Mil. lb.	58.7	60.5	62.6	65.6	57.3	45.8	50.7	735.4	53.0
USDA net removals:										
Butter	Mil. lb.	6.9	---	---	---	4.9	14.2	20.0	39.4	32.4
Cheddar cheese	Mil. lb.	10.9	---	---	---	.4	8.7	18.0	38.0	17.8
Nonfat dry milk	Mil. lb.	38.8	6.7	6.6	9.7	8.9	19.4	17.6	157.1	24.8
Evaporated milk	Mil. lb.	1.9	2.3	2.7	1.1	1.5	1.5	1.4	21.8	.3
Total whole milk equivalent	Mil. lb.	254	5	6	3	108	383	592	1,236	846
Fluid sales, change from year earlier: 6/										
Whole milk	Pct.	-.9	-2.1	-3.2	-4.9	-4.2	-1.4	-3.2	-1.9	
Low-fat and skim milk	Pct.	+10.4	+6.8	+7.5	+7.4	+6.1	+8.8	+6.7	+7.6	
Total fluid milk	Pct.	+2.4	+.8	+.2	-1.0	-.7	+2.0	+.1	+1.0	
Cream and cream mixtures	Pct.	+10.0	+4.4	-.6	+.1	-4.0	+5.1	N.A.	+3.2	

1/ Seasonally adjusted price as percentage of parity price.
2/ Ice cream, ice milk, and sherbet.
3/ Includes manufactured products for which current monthly series are available.
4/ Natural, plus process American cheese held by CCC.
5/ Excludes cream and bulk condensed milk.
6/ Daily average sales in Federal and State Marketing areas.

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